

**SONY.**

VIDEO ROUTING SWITCHER (12×1)

**BVS-V1201**



MAINTENANCE MANUAL

1st Edition (Revised 3)

Serial No. 10001 and Higher

## WARNING

### For the customers in the USA

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Important—To insure that the complete system (including this peripheral) is capable of complying with the FCC requirements, it is recommended that the user make sure that the individual equipment of the complete system has a label with one of the following statements.

"This equipment has been tested with a Class A Computing Device and has been found to comply with Part 15 of FCC rules."

—or—

"This equipment complies with the requirements in Part 15 of FCC rules for a Class A Computing Device."

—or equivalent.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a computing device pursuant to Subpart J of Part 15 of FCC Rules.

### For the customers in Canada

This apparatus complies with the Class A limits for radio noise emissions set out in Radio Interference Regulations.

### Pour les utilisateurs au Canada

Cet appareil est conforme aux normes Classe A pour bruits radioélectriques, spécifiés dans le Règlement sur le brouillage radioélectrique.

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

Check the metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

### LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 3.5 mA. Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 5.25 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 20V AC range are suitable. (See Fig. A)

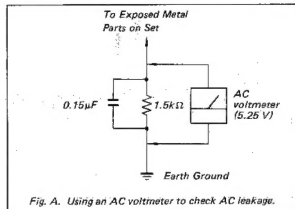


Fig. A. Using an AC voltmeter to check AC leakage.

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# 第1章 設置

## 1-1. 使用環境

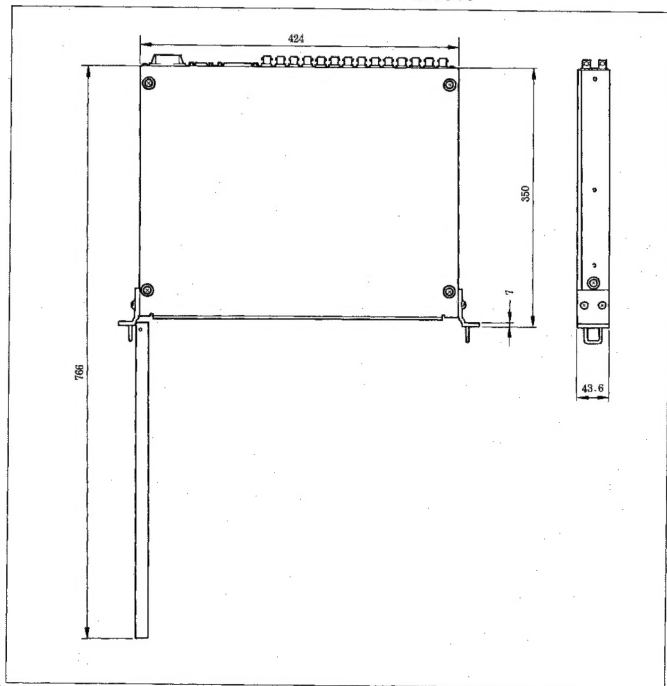
- セット内の温度上昇を防止するために、設置する場所の空気の循環には充分注意して下さい。
- セットの動作環境温度は0°C~40°Cですのでセットを熱源の側に設置しないで下さい。

## 1-2. 設置スペース

- セットの外形寸法は図の通りです。

## 1-3. 電源

- BVS-V1201の電源は、スイッチング電源(±5V)を使用しています。入力AC 100~240V±10%切り換えなしで対応します。



#### 1-4. システムセレクトスイッチのセッティング

- セレクトスイッチの機能は下記の通りですので、各々のシステムにあわせて、また状況に応じて、設定して下さい。

##### 1-4-1. IF-278 基板

###### ・S1

No.	機 能
1	テストモードの選択
2	A/Vの切り換え
3	REMOTE 1, 2の PROTOCOLの選択
4	未使用
5	
6	
7	
8	REMOTE 1, 2の RESPONSE

###### ・S1-1 設定

ON	TEST MODE
OFF	NORMAL MODE

###### ・S1-2 設定

ON	BVS-A1201
OFF	BVS-V1201

###### ・S1-8 設定

ON	NO RETURN RESPONSE
OFF	RETURN RESPONSE

工場出荷時: S1-1: OFF

S1-2: OFF

S1-3: OFF

S1-4: OFF

S1-5: OFF

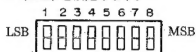
S1-6: OFF

S1-7: OFF

S1-8: OFF

###### ・S2: ユニットアドレスの選択

REMOTE 1, 2において、制御する場合の木機のアドレス (UA2) を設定します。



どれか1つのみONにすることができます。

###### ・JW1

RS-422の通信回路の終端(100Ω) ON/OFF 設定

###### ・工場出荷時 (SW/JW)

No.	設定値
S2-1	ON
S2-2	OFF
S2-3	OFF
S2-4	OFF
S2-5	OFF
S2-6	OFF
S2-7	OFF
S2-8	OFF
JW1	1 (OFF)

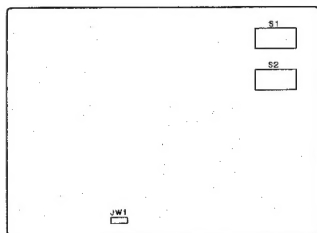
###### ・テストモード

S1-1をONの状態にして電源をONにするとテストモードになり、クロスポイントを1から12に1秒毎に順番に変えます。

IN IN IN IN IN IN IN  
1 ⇄ 2 ⇄ 3 ⇄ ..... 11 ⇄ 12 ⇄ 1 ⇄ .....

###### ・テストモード解除

S1-1をOFFの状態にして電源をONして下さい。



IF-278 基板 (部品面)

# 1-4-2. VSW-22基板

## ・JW1: SW TIMING

スイッチの切り替えタイミングを設定します。

No.	名 称	機 能
1	VI	JW4で設定されるビデオ信号のパーティカルインターバルで切り替わります。この設定の場合で入力がなくなった場合には、2のDIRECTの同じ動作になります。
2	DIRECT	入・出力のビデオ信号に関係なくボタンを押したタイミング又は、制御信号がきたタイミングで切り替わります。
3	CPU	IF-278基板内のCPUで設定されたタイミングで切り替わります。
4	EXT	REMOTE・3コネクター内の、VI STROBE BUSの立ち上がりタイミングで切り替わります。この場合は、共通BUSラインにタイミング情報が送られていることが条件となります。(JW5: 参照)

## ・JW2: CONTROL

スイッチの切り替え制御方式を設定します。

No.	名 称	機 能
1	PANEL	前面パネルのボタン、別売りのリモートコントロールパネルBKS-R1210のボタン、及びREMOTE・1, 2コネクターからのシリアル信号による制御の場合に設定します。
2	EXT	BVE-900/BVE-9000等、REMOTE・3コネクターのBINARY DATA BUSを直接制御する方式の場合に設定します。

## ・JW3: CLAMP

入力信号に対するクランプ方式を設定します。

No.	名 称	機 能
1	SELF	各入力回路自身でクランプする方式です。色差信号以外の全てのビデオ信号に対して有効です。この場合、入力信号同志は、非同期でもかまいません。
2	PULSE	R-Y, B-Yの色差信号等バイポーラ信号を入力する場合のクランプパルスによるクランプです。全てのビデオ信号に対して有効ですが、クランプパルスを発生するための入力(又は、同等のOUTPUT VIDEO)が必要です。

## ・JW4: VP SOURCE

スイッチタイミング、及びクランプパルスのREF信号のソースを設定します。

No.	名 称	機 能
1	REF	リアパネルにREF VIDEO端子を入力として設定します。この場合に4 Vp-p、又は2 Vp-pのSYNC信号でもREF VIDEOとして供給することが可能です。
2	OUTPUT	本機のOUTPUT端子の出力信号をREF VIDEOとして設定します。

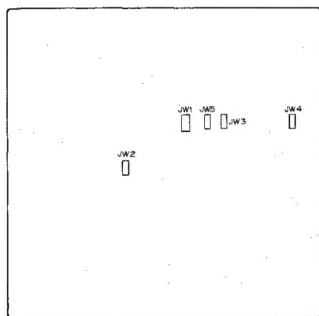
## ・JW5: VI SEND

VIパルスをREMOTE・3のVI STROBE BUSラインに送り出すかを設定します。

No.	名 称	機 能
1	OFF	VIパルスを送り出しません。
2	ON	VIパルスを送り出します。VIパルスは1つのユニットからのみ送り出す様にします。

## • JW の設定 (工場出荷時)

JW No.	設定値
JW 1	1
JW 2	1
JW 3	1
JW 4	1
JW 5	1



VSW-22 基板 (部品面)

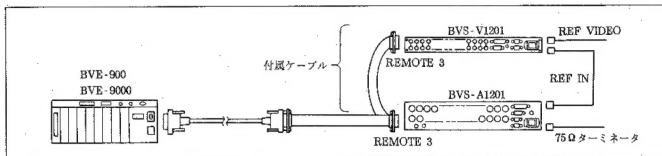


## 1-5. 接続

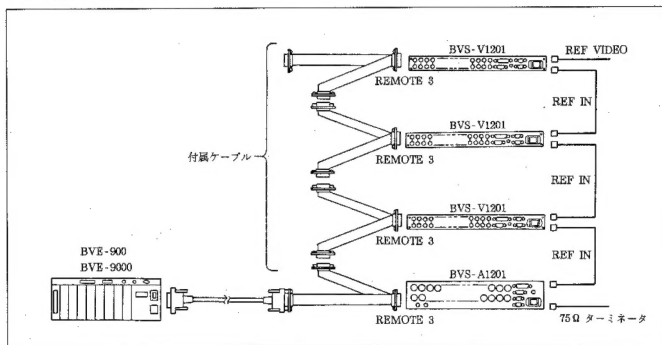
### 1-5-1. BVE-900, BVE-9000のモニタースイッチャーとして接続する場合

#### (1) 接続方法

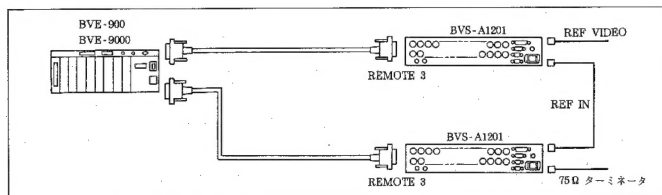
##### • Composite Video のとき



##### • Component Video のとき



##### • 4 Channel Audio のとき



(2) 接続後の設定

(2)-1. BVE-900, BVE-9000からのコントロールの場合は、下記の様に設定します。

• BVS-V1201, VSW-22基板の設定

JW. No.	設定値
JW. 1	1
JW. 2	2
JW. 3	1
JW. 4	1
JW. 5	1

• BVS-A1201, ASW-18基板の設定

JW. No.	設定値
JW. 1	1
JW. 2	2
JW. 3	1

(2)-2. Component (Y, R-Y, B-Y) VideoなどのSYNCなしVIDEO信号を入力している場合

• BVS-V1201, VSW-22基板の設定

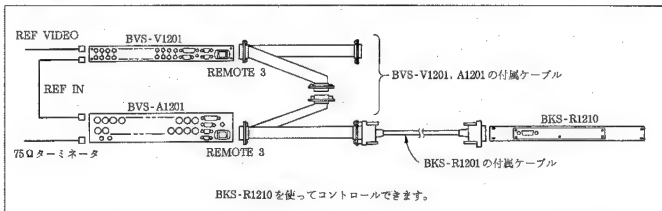
JW. No.	設定値
JW. 1	1
JW. 2	2
JW. 3	2
JW. 4	1
JW. 5	1

<注意事項>

- BVS-V1201の前面パネルのボタンは無効となります。但し、LEDは、クロスポイントの状態を常に表示します。

## 1-5-2. BVS-V1201とBVS-A1201を単独で使用する場合

### (1) 接続方法



### (2) 接続後の設定

- BVS-V1201, VSW-22基板の設定

JW. No.	設定値
JW. 1	1
JW. 2	1
JW. 3	1
JW. 4	1
JW. 5	1

- BVS-A1201, ASW-18基板の設定

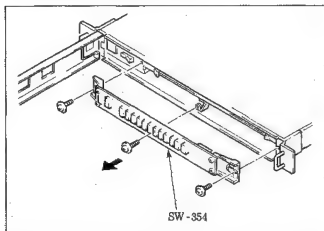
JW. No.	設定値
JW. 1	1
JW. 2	1
JW. 3	1

### <注意事項>

- BVS-V1201の前面パネルのボタンとBKS-R1210のボタンで、それぞれ異なるクロスポイントを同時に押した場合、先に押した方のボタンが優先し、指を離すまで有効となります。
- BVS-V1201の前面パネル、及びBKS-R1210では、AUDIO (BVS-A1201)の各チャンネルを別々に選択することは出来ません。

## 1-6. SW-354 基板の取り外し

- ・フロントパネルを開け、ネジ3本 (+PSW 3×6) を外し SW-354 基板を手前に引き出します。

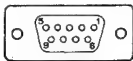


## 1-7. コネクターの入出力信号

コネクターパネルのコネクターの入出力信号は下記の通りです。

## 1-7-1. BVS-V1201

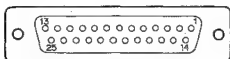
REMOTE 1,2 (D-SUB 9 ピン PIN FEMALE)



— EXT VIEW —

PIN No.	信号名	機能 (RS422A 規格)
1	FG	FRAME GROUND
2	TA	TRANSMIT A (-)
3	RB	RECEIVE B (+)
4	RC	RECEIVE SIGNAL COMMON
5	SP	
6	TC	TRANSMIT SIGNAL COMMON
7	TB	TRANSMIT B (+)
8	RA	RECEIVE A (-)
9	FG	FRAME GROUND

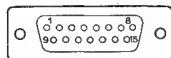
REMOTE 3. (D-SUB 25ピンFEMALE)



- EXT VIEW -

PIN No.	信号名	機 能
1	A2-A	AUDIO 2 SELECT BINARY DATA: BUS
2	A2 ONLY	ONLY AUDIO 2 SELECT BUS
3	+5 V-A	AUDIO +5 V OUTPUT
4	VI-STB	VERTICAL INTERVAL STROBE: BUS
5	A1-A	AUDIO 1 SELECT BINARY DATA: BUS
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	CHANNEL SELECT: BUS
10	A1 ONLY	ONLY AUDIO 1 SELECT BUS
11	V ONLY	ONLY VIDEO SELECT BUS
12	KEY ON	KEY ON: INPUT
13	V-A	VIDEO SELECT BINARY DATA: BUS
14	A2-B	AUDIO 2 SELECT BINARY DATA: BUS
15	A2-C	
16	A2-D	
17	+5 V-V	VIDEO +5 V OUTPUT
18	GND	GND
19	CH-1	CHANNEL SELECT: BUS
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	VIDEO SELECT BINARY DATA: BUS
24	V-C	
25	V-B	

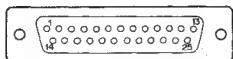
# TALLY (D-SUB 15 ピン MALE)



— EXT VIEW —

PIN No.	信号名	機 能
1	TALLY 1	MAKE A POINT OF CONTACT TO TALLY COMMON
2	TALLY 2	
3	TALLY 3	
4	TALLY 4	
5	TALLY 5	
6	TALLY 6	
7	TALLY 7	
8	TALLY 8	
9	TALLY 9	
10	TALLY 10	
11	TALLY 11	
12	TALLY 12	
13	TALLY COM	
14	SPARE	GND
15	GND	

SW-354 基板 (D-SUB 25 ピン MALE)



— EXT VIEW —

PIN No.	信号名	機 能
1		
2	A2 ONLY	GREEN BUTTON : OUTPUT
3	+5 V IN	+5 V FOR GREEN TALLY
4		
5	A1-A	GREEN TALLY BINARY DATA: INPUT
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	BUTTON BINARY DATA: OUTPUT
10	A1 ONLY	GREEN BUTTON : OUTPUT
11	V ONLY	RED BUTTON : OUTPUT
12	KEY ON	KEY ON SIGNAL : OUTPUT
13	V-A	RED TALLY BINARY DATA: INPUT
14		
15		
16		
17	+5 V IN	+5 V FOR RED TALLY
18	GND	
19	CH-1	BUTTON BINARY DATA: OUTPUT
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	RED TALLY BINARY DATA: INPUT
24	V-C	
25	V-B	

## 1-8. 接続コネクタ

コネクタパネル部の コネクタの機能名称	接続するケーブル側の コネクタの部品番号と名称
REMOTE 1,2	RCC-5G
	RCC-10G
	(リモコンケーブル 9P)
	1-556-873-23
REMOTE 3	RCC-30G
	インターフェースケーブル
	(BKS-R1210 付属)
TALLY	接続コード
	1-574-883-11
	1-558-592-11

## 1-9. ラックマウントの方法

- 19インチ標準ラックに組み込む場合

<推奨品>

スライドレール: ACCURIDE社製, RACKMOUNT  
SUDES MODEL C-305-22  
SLIDE LENGTH 22 INCH 2本

ブラケット: ACCURIDE社製 #5516-2 4個

<用意するもの>

インナーメンバー取り付け用ネジ (+B 4×6) 6本

板ナット (3穴) 8枚 (ソニー部品番号 3-651-784-01)

ブラケット固定用ネジ① (+B 4×8) 8本

ブラケット固定用ネジ② 六角穴付ボルト M 4×16 8本

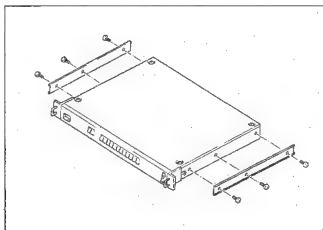
ラックマウント用ネジ (+RK 5×16) 4本

ラックマウント用飾りワッシャー 4個

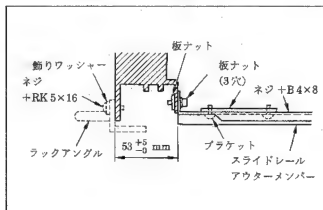
(ソニー部品番号 2-297-913-01)

L レンチ (対辺 3 mm) 1個

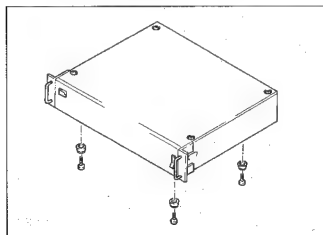
- 用意したネジ (+B 4×6) でスライドレールのインナーメンバーを取り付けます。



- スライドレールのアウターメンバーとブラケットを4枚の板ナット (3穴) を使用し 8本のネジ (+B 4×8) で仮止めします。
- スライドレールのアウターメンバーのブラケットをラックに取り付けスライドレールの先端からラック外側までの寸法が規格に合うように調整します。

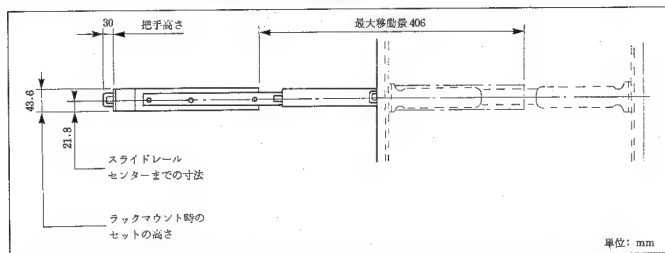


- セット底面の脚4個を取り外します。



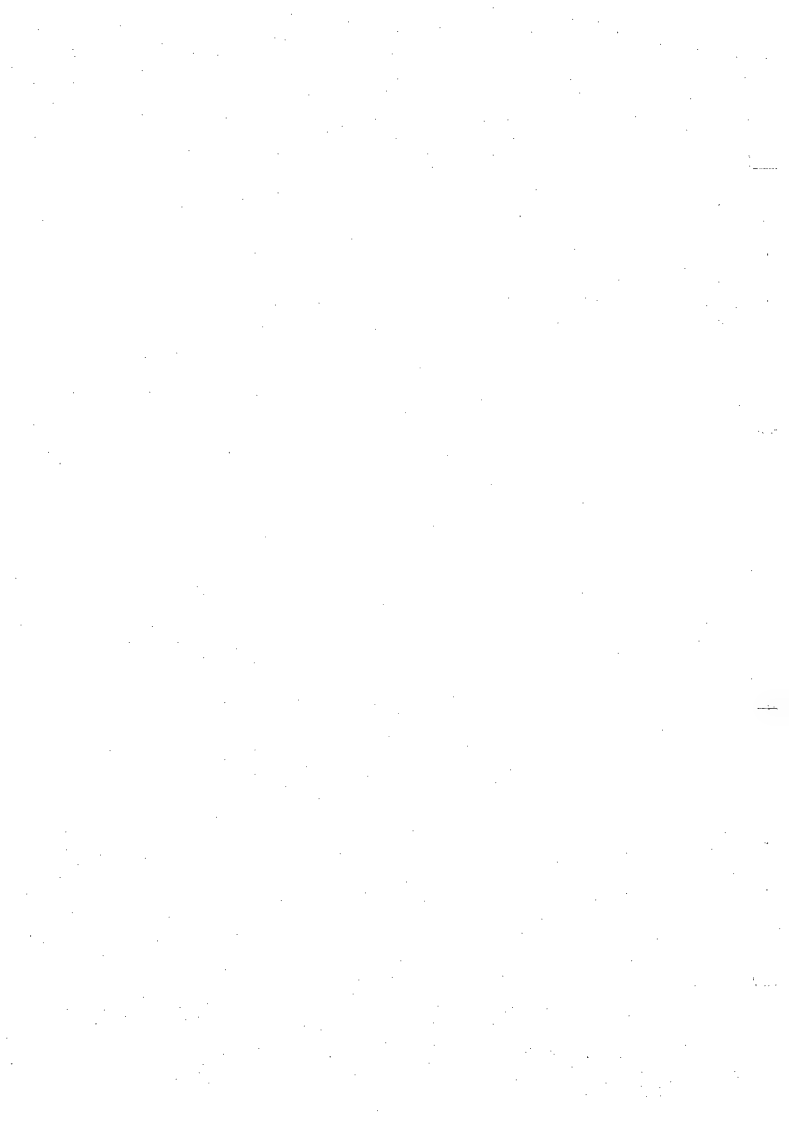


**Figure 1**



1-10、 付属品アクセサリ

- ・電源コード (3)
- ・オペレーションマニュアル (1)
- ・メンテナンスマニュアル (1)
- ・Dサブ 25Pハーネス (1)
- ・延長基板 (1)
- ・ラベル (1)



## SECTION 1 INSTALLATION

### 1-1. OPERATING ENVIRONMENT

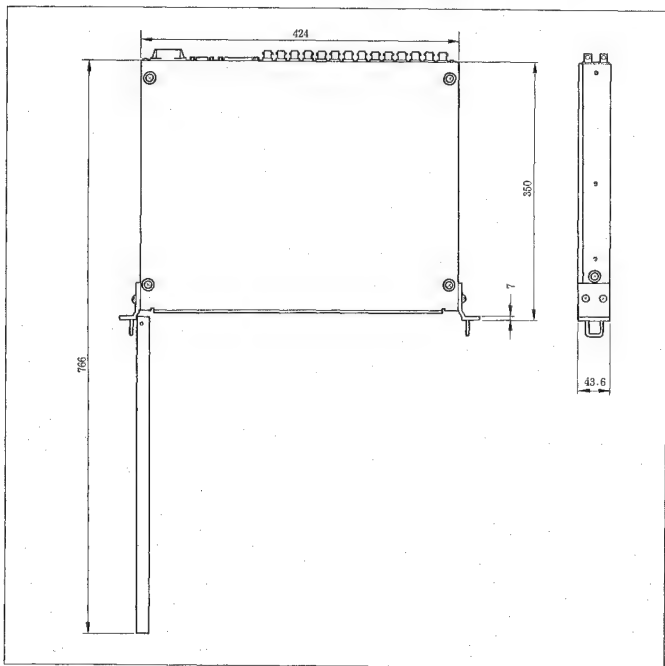
- .Be very careful of the air circulation at the installation site to prevent an increase in temperature within the unit.
- .As the operating temperature of the unit is 0°C to 40°C, do not install the unit close to a source of heat.

### 1-2. INSTALLATION SPACE

- .The external dimensions of the unit are as shown in the figure.

### 1-3. POWER SOURCE

- .A switching regulator ( $\pm 5V$ ) is used for the power source of the BVS-V1201; therefore, the unit can be used with a voltage of 100V to 240V  $\pm 10\%$  without changing the supply voltage.



#### 1-4. SYSTEM SELECT SWITCH SETTINGS

The functions of the select switches are the following. Setting them according to your system and your requirements.

##### 1-4-1. IF-278 Board

.S1

No.	Function
1	TEST MODE SELECT
2	CHANGEING (A/V)
3	PROTOCOL SELECT of REMOTE 1 and 2
4	
5	NOTHING
6	
7	
8	RESPONS of REMOTE 1 and 2

.S1-1

ON	TEST MODE
OFF	NORMAL MODE

.S1-2

ON	BVS-A1201
OFF	BVS-V1201

.S1-8

ON	NO RETURN RESPONSE
OFF	RETURN RESPONSE

When the unit is shipped, this switches are set to the OFF positions.

##### .S2; SELECT OF UNIT ADDRESS

Install the address (UA2), when control the BVS-V1201 by REMOTE 1 and 2.

	1	2	3	4	5	6	7	8	
LBS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	MSB

Only one select switch is able to set to the ON position.

.JW1

This is the terminal resistor switch of the communication circuit (RS-422) select to the ON or OFF by 100 ohm.

When the unit is shipped, this switches are set to the positions as follows. (SW/JW)

No.	Position
S2-1	ON
S2-2	OFF
S2-3	OFF
S2-4	OFF
S2-5	OFF
S2-6	OFF
S2-7	OFF
S2-8	OFF
JW1	1 (OFF)

##### .TEST MODE

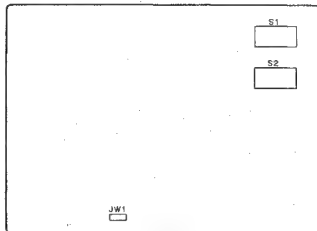
When S1-1 and power switch are set to the ON position, the BVS-V1201 execute the test mode.

The test mode changed to the X.point to pass around 1 through 12 for every second.

IN IN IN IN IN IN IN  
1 ⇒ 2 ⇒ 3 ⇒ ..... 11 ⇒ 12 ⇒ 1 ⇒ .....

##### .CANCEL THE TEST MODE

Put off the S1-1, then put on the power switch.



IF-278 Board (Component Side)

# 1-4-2. VSW-22 Board

## .JW1: Switch Timing

Setting select switch timing.

No.	Name	Description
1	VI	Changes state using the VI (vertical interval) pulse of the video signal set by JW4. Operations are the same as No. 2 below (DIRECT) when there is no input.
2	DIRECT	Changes state when a button is pushed or when a control signal is received, regardless of whether any video signals are being input or output.
3	CPU	Changes state according to the timing specified by the CPU on the IF-278 board.
4	EXT	Changes state at the leading edge in the VI strobe bus line of the connector REMOTE-3. In this case, timing information must be sent to the common bus line. (Refer to JW5.)

## .JW2: Control

Setting control switch selection.

No.	Name	Description
1	PANEL	Specifies control using the button on the front panel, the button on the BKS-R1210 (optional) remote control panel, or a serial signal from the connectors REMOTE-1 or REMOTE-2.
2	EXT	Specifies direct control of the binary data bus line of the connector REMOTE-3 (for the BVE-900 or BVE-9000).

## .JW3: Clamp

Setting input signal clamping.

No.	Name	Description
1	SELF	Used to clamp signals in all input circuits. All signals other than the color-difference signals are clamped. With this setting, it does not matter if the input signals are asynchronized.
2	PULSE	Bipolar input signals such as the color difference-signals R-Y, B-Y, etc. are clamped using a clamp pulse. Though all video signals are clamped, the proper input (or equivalent video output) to generate the clamp pulse is necessary.

## .JW4: VP Source

Setting the source of the reference signal for the clamp pulse or switch timing.

No.	Name	Description
1	REF	Specifies the REF VIDEO terminal on the rear panel for input. It is possible to supply a 2Vp-p (peak-to-peak) or a 4Vp-p sync signal as the reference video signal.
2	OUTPUT	Specifies the signal output from the output terminal to be the reference video signal.

**.JW5: VI Send**

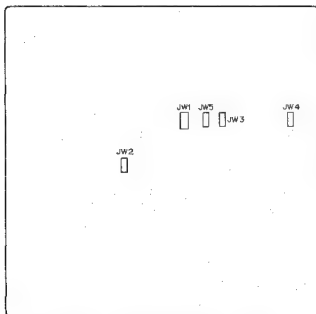
Setting whether the VI pulse is to be sent to the VI strobe bus line of REMOTE-3.

No.	Name	Description
1	OFF	No VI pulse is sent out.
2	ON	A VI pulse is sent out, but can only be sent out from one unit.

**.Setting position of the JW.**

(Set before ship)

JW No.	Position
JW 1	1
JW 2	1
JW 3	1
JW 4	1
JW 5	1



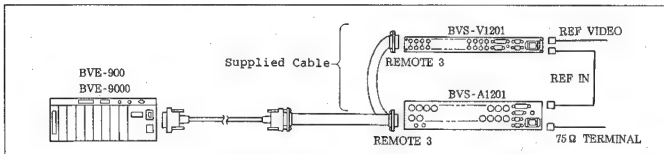
**VSW-22 Board (Component Side)**

## 1-5. CONNECTIONS

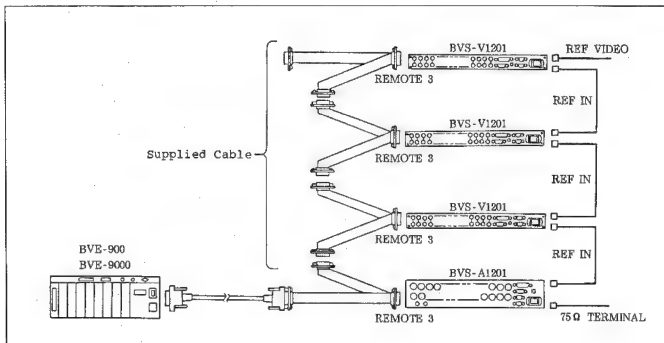
### 1-5-1. Connecting as a Monitor Switcher for the BVE-900/BVE-9000

#### (1) Connection method

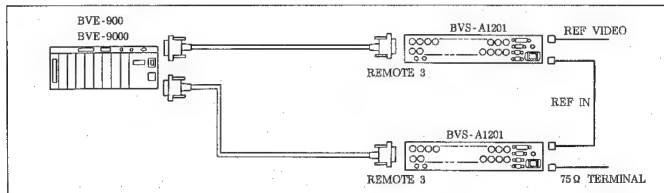
.For composite video



.For component video



.For four-channel audio



**(2) Post connection settings**

(2)-1. Control values from the BVE-900 and BVE-9000 must be set as follows.

.BVS-V1201 and VSW-22 board settings

JW. No.	Setting
JW. 1	1
JW. 2	2
JW. 3	1
JW. 4	1
JW. 5	1

.BVS-A1201 and ASW-18 board settings

JW. No.	Setting
JW. 1	1
JW. 2	2
JW. 3	1

(2)-2. With video signals such as component video (Y, R-Y, B-Y) when the video signal containing no SYNC is input.

.BVS-V1201 and VSW-22 board settings

JW. No.	Setting
JW. 1	1
JW. 2	2
JW. 3	2
JW. 4	1
JW. 5	1

**Note:**

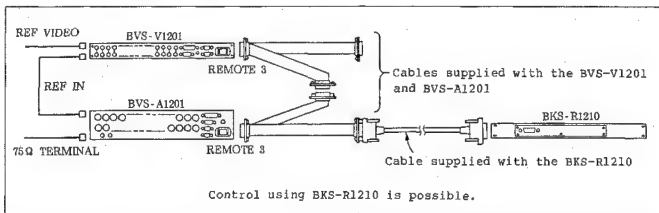
The switches on the BVS-V1201's front panel become invalid.

However, the LEDs indicate cross points normally.



## 1-5-2. Using BVS-V1201 and BVS-A1201 Independently

## (1) Connection method



## (2) Post connection settings

## .BVS-V1201 and VSW-22 board settings

JW. No.	Setting
JW. 1	1
JW. 2	1
JW. 3	1
JW. 4	1
JW. 5	1

## .BVS-A1201 and ASW-18 board settings

JW. No.	Setting
JW. 1	1
JW. 2	1
JW. 3	1

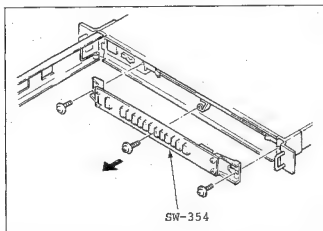
**Note:**

.When the switches on the BVS-V1201's front panel and the BKS-R1210 are pressed simultaneously at different cross points, before the push switch take precedence and become effective to remove your hand.

.Audio (BVS-A1201) channels cannot be selected separately using the BVS-V1201's front panel and the BKS-R1210.

#### 1-6. HOW TO REMOVE THE SW-354 BOARD

- .Open the front panel.
- .Remove the three screws (+PSW3x6) and pull out the SW-354 board toward you.

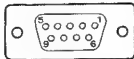


#### 1-7. INPUT/OUTPUT SIGNALS OF THE CONNECTOR

The input/output signals of the connector on the connector panel are the following.

##### 1-7-1. BVS-V1201

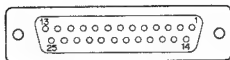
REMOTE 1 and 2 (D-SUB 9PIN FEMALE)



-EXT VIEW-

PIN No.	Signal	Function (RS422A)
1	FG	FRAME GROUND
2	TA	TRANSMIT A (-)
3	RB	RECEIVE B (+)
4	RC	RECEIVE SIGNAL COMMON
5	SP	
6	TC	TRANSMIT SIGNAL COMMON
7	TB	TRANSMIT B (+)
8	RA	RECEIVE A (-)
9	FG	FRAME GROUND

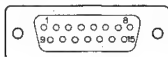
REMOTE 3. (D-SUB 25PIN FEMALE)



-EXT VIEW-

PIN No.	Signal	Function
1	A2-A	AUDIO 2 SELECT BINARY DATA: BUS
2	A2 ONLY	ONLY AUDIO 2 SELECT BUS
3	+5 V-A	AUDIO +5 V OUTPUT
4	VI-STB	VERTICAL INTERVAL STROBE: BUS
5	A1-A	AUDIO 1 SELECT BINARY DATA: BUS
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	CHANNEL SELECT: BUS
10	A1 ONLY	ONLY AUDIO 1 SELECT BUS
11	V ONLY	ONLY VIDEO SELECT BUS
12	KEY ON	KEY ON: INPUT
13	V-A	VIDEO SELECT BINARY DATA: BUS
14	A2-B	AUDIO 2 SELECT BINARY DATA: BUS
15	A2-C	
16	A2-D	
17	+5 V-V	VIDEO +5 V OUTPUT
18	GND	GND
19	CH-1	CHANNEL SELECT: BUS
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	VIDEO SELECT BINARY DATA: BUS
24	V-C	
25	V-B	

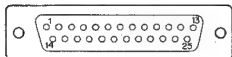
TALLY (D-SUB 15PIN MALE)



-EXT VIEW-

PIN No.	Signal	Function
1	TALLY 1	MAKE A POINT OF CONTACT TO TALLY COMMON
2	TALLY 2	
3	TALLY 3	
4	TALLY 4	
5	TALLY 5	
6	TALLY 6	
7	TALLY 7	
8	TALLY 8	
9	TALLY 9	
10	TALLY 10	
11	TALLY 11	
12	TALLY 12	
13	TALLY COM	
14	SPARE	GND
15	GND	

SW-354 Board (D-SUB 25PIN MALE)



-EXT VIEW-

PIN No.	Signal	Function
1		
2	A2 ONLY	GREEN BUTTON : OUTPUT
3	+5 V IN	+5 V FOR GREEN TALLY
4		
5	A1-A	GREEN TALLY BINARY DATA: INPUT
6	A1-B	
7	A1-C	
8	A1-D	
9	CH-C	BUTTON BINARY DATA: OUTPUT
10	A1 ONLY	GREEN BUTTON : OUTPUT
11	V ONLY	RED BUTTON : OUTPUT
12	KEY ON	KEY ON SIGNAL: OUTPUT
13	V-A	RED TALLY BINARY DATA: INPUT
14		
15		
16		
17	+5 V IN	+5 V FOR RED TALLY
18	GND	
19	CH-1	BUTTON BINARY DATA: OUTPUT
20	CH-D	
21	CH-A	
22	CH-B	
23	V-D	RED TALLY BINARY DATA: INPUT
24	V-C	
25	V-B	

1-8. CONNECTOR

Function name of the connector on the connector panel	Part number of the connector and its name on the cable side
REMOTE 1, 2	RCC-5G
	RCC-10G (Remote control cable 9P)
	1-555-873-23
	RCC-30G
REMOTE 3	Interface cable (BKS-R1210)
	Connector code
	1-574-883-11
TALLY	1-558-592-11

## 1-9. RACK MOUNTING

### .Mounting Onto a 19-inch Standard Rack

<Recommended products>

Slide rail: RACKMOUNT SUDES MODEL C-305-22  
made by ACCURIDE.

SLIDE LENGTH 22 INCH. (2)

Bracket : #5516-2 made by ACCURIDE. (4)

<Prepare the following>

Install the inner member by six screws  
(+B4x6)

Eight leaf nuts (3 holes)

(Sony Part No. 3-651-784-01)

Fix the bracket to eight screws ① (+B4x8)

Fix the bracket to eight screws ②

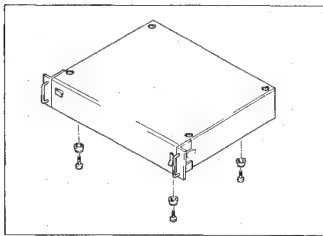
(The hexagon socket head bolt M4x16)

Install the Rack mounting by four screws  
(+RK5x16)

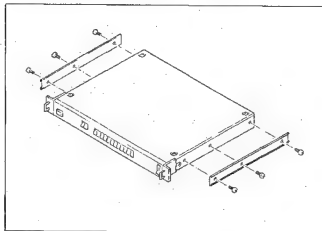
Four washers (Sony part No. 2-297-913-01)

L wrench (3 mm)

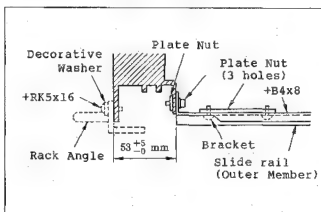
1. Remove the four feet from the bottom of the unit.



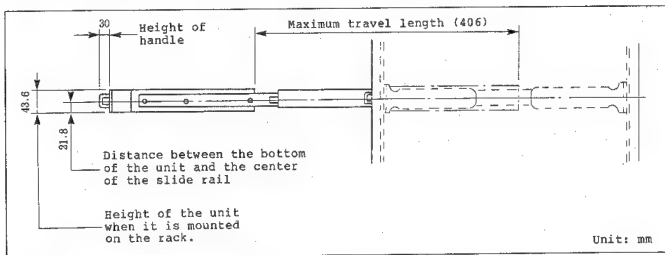
2. Attach the inner member of the slide rail to provide the screws (+B4x6).



3. Tighten the bracket and the outer member of the slide rail temporarily with the eight screws (+B4x8) and with the four plate nuts which have 3 holes.
4. Attach the bracket of the outer member of the slide rail to the rack, and adjust the dimension between the head of the slide rail and the koutside of the rack so that it meets the specification.



When BVS-V1201 is mounted on the rack, the maximum travel length is as follows.



#### 1-10. ACCESSORIES

- |                     |     |
|---------------------|-----|
| .Operation Manual   | (1) |
| .Maintenance Manual | (1) |
| .D sub 25P Harness  | (1) |
| .Extension board    | (1) |
| .Power cable        | (3) |
| .Label              | (1) |



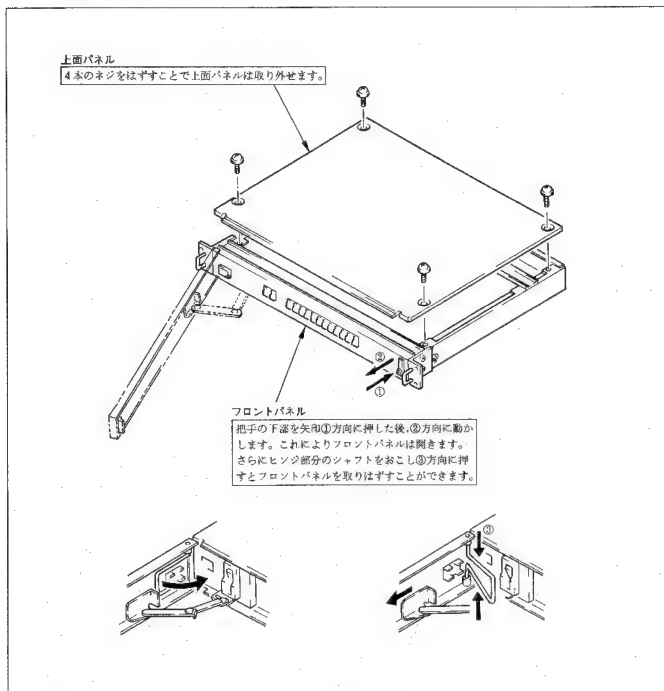


## 第2章 サービスインフォメーション

### 2-1. コンソールからの取り外し

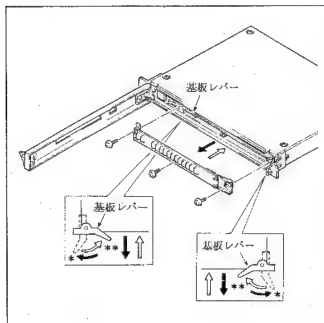
- 接続されているコネクタを抜き、コンソールから静かに引き抜いて下さい。

### 2-2. 外装の開閉／取り外し



### 2-3. カバー基板の取り付け/取り外し方

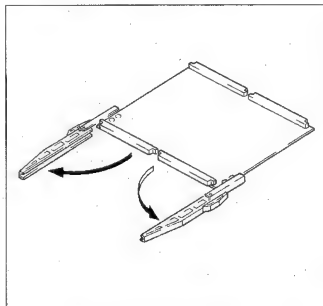
- 基板レバーを矢印\*の方向へ押し手前に引くと、取り外すことができます。
- 基板レバーガイド、基板ガイドに沿って、挿入します。基板レバーを矢印\*\*方向に倒すと基板を取り付けることができます。



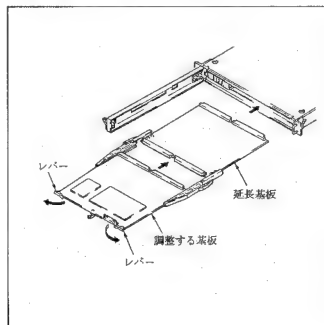
### 2-4. サービス方法

- VSW-22 基板の調整方法

(1) 延長基板のレールを開きます。



(2) レバーを外側に押し開いて調整基板を抜き、延長基板を差し込みます。

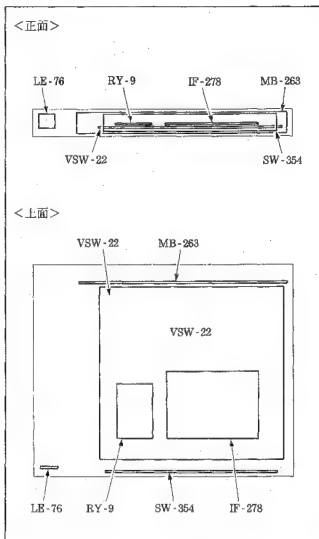


## 2-5. 回路構成

## 2-5-1. BVS-V1201

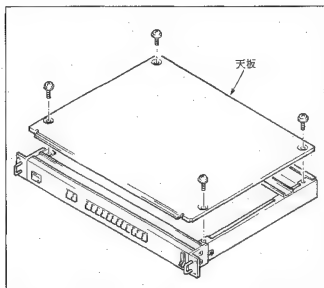
名 称	機 能
VSW-22	VIDEO SWITCH BOARD
MB-263	MOTHER BOARD
IF-278	SERIAL INTERFACE BOARD
RY-9	TALLY BOARD
LE-76	LED BOARD
SW-354	SWITCH BOARD

## 2-6. 基板配置図



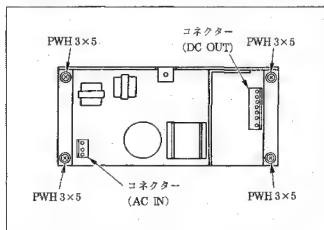
## 2-7. 電源の取り外し

(1) 天板を外します。



(2) 電源のコネクター（前後2ヶ所）を抜きます。

(3) 電源を止めているネジ4本（+PWH3×5）を外します。



## 2-8 サービス部品

1. 回路図、分解図、電気部品リスト中で△及び■で囲まれた部品は、安全性を維持するために重要な部品です。従ってこれらの部品を交換する時には必ず指定の部品と交換して下さい。
2. パーツセンターから供給される部品は、実際にセットに使用している部品と形状等が異なることが時々あります。これらは「部品の共通化」等によるものです。
3. 分解図、電気部品リスト中SP欄が○で示されている部品は交換頻度が低い部品ですので、在庫していないことがあり、納期が長くなることがあります。

## SECTION 2

### SERVICE INFORMATION

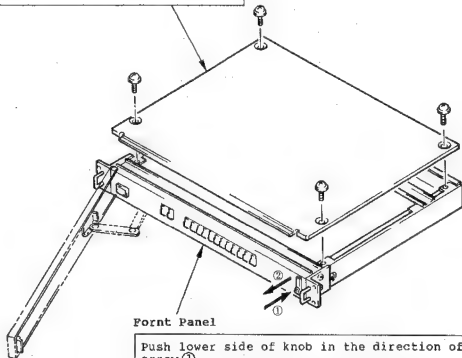
#### 2-1. REMOVAL FROM THE CONSOLE

Remove all connectors and slowly pull out the from the console.

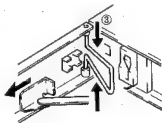
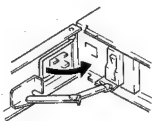
#### 2-2. OPENING/REMOVAL OF CABINET

##### Top Plate

Loosen the four fixing screws and remove the top plate.



Push lower side of knob in the direction of arrow ①.  
Move knob in the direction of arrow ②.  
Then pull up the shaft of the hinge portion and push it in the direction of ③.  
The front panel can be remove.

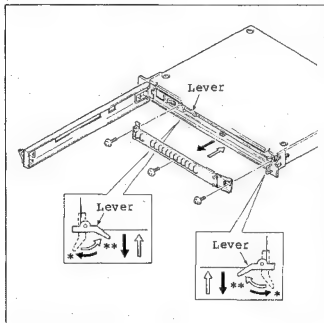


### 2-3. REMOVAL/INSTALL PROCEDURE

.Pushing in the direction of the \*, pull out by the lever.

The card board can be removed.

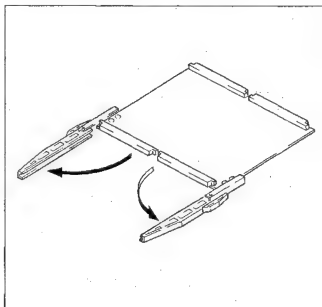
.Insert the board along with the lever in the direction of \*\*, the card can be installed.



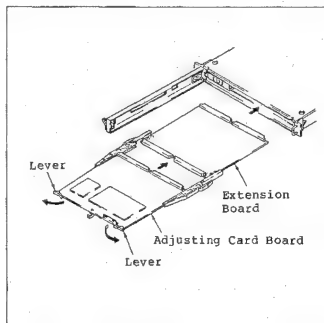
### 2-4. HOW TO MAINTENANCE

.Adjusting card board (VSW-22 board)

(1) Open the rail of the extension board.



(2) Pull out the lever out side and remove the board to be adjusted then attach the extension board.

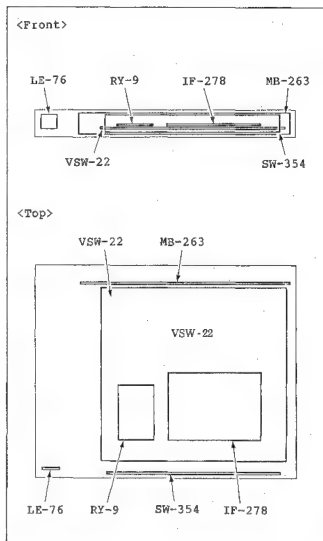


## 2-5. CIRCUIT CONFIGURATION

### 2-5-1. BVS-V1201

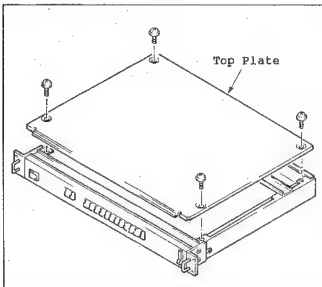
Board Name	Functions
VSW-22	VIDEO SWITCH BOARD
MB-263	MOTHER BOARD
IF-278	SERIAL INTERFACE BOARD
RY-9	TALLY BOARD
LE-76	LED BOARD
SW-354	SWITCH BOARD

## 2-6. LAYOUT OF THE PRINT BOARD

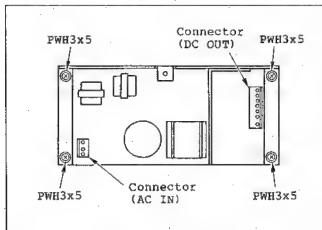


## 2-7. HOW TO REMOVE THE SWITCHING REGULATOR

- (1) Remove the top plate.



- (2) Remove two connectors (front and back).  
 (3) Remove four screws (+PSW3x5) to the switching regulator.



## 2-8. NOTES ON REPAIR PARTS

### (1) Safety Related Components Warning

Components identified by shading marked with  $\Delta$  on the schematic diagrams, exploded views and electrical spare parts list are critical to safe operation. Replace these components with Sony parts whose part numbers appear in this manual or in service bulletins and service manual supplements published by Sony.

### (2) Standardization of Parts

Repair parts supplied from Sony Parts Center may not be always identical with the parts which actually in use due to "accommodating the improved parts and/or engineering changes" or "standardization of genuine parts". This manual's exploded views and electrical spare parts list are indicating the part numbers of "the standardized genuine parts at present".

### (3) Stock of Parts

Parts marked with "o" SP (supply Code) column of the spare parts list are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.



## 第3章 電気調整要項

### [使用機器]

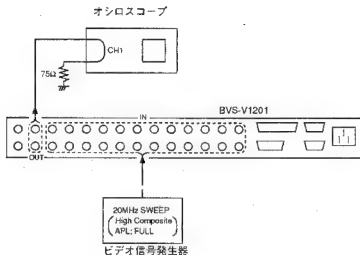
- 75Ω終端抵抗器
- オシロスコープ : 100MHz以上の特性のあるもの
- ビデオ信号発生器: テクトロニクス1410又は同等品

### [接続]

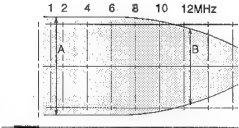
ビデオ信号発生器の※1 SWEEP信号 (※2 High ※3 Composite APL; ※4 FULL) をオシロスコープのCH-1へ接続し、75Ω終端抵抗器をつなぎます。

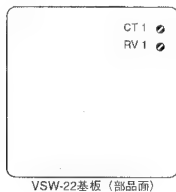
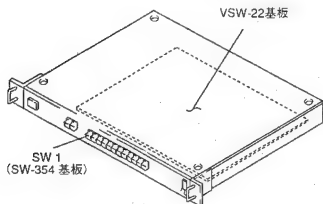
この時、波形が正常であることを確認して下さい。

- 注意: ※1 SWEEP = SWEEP/MULTIBURST  
 ※2 High (20MHz) = FREQ RANGE  
 ※3 Composite = COMPOSITE/CONTINUOUS  
 ※4 FULL = AMPL



### 3-1. GAIN, f 特調整

調整時の状態	規格	調整箇所
<ul style="list-style-type: none"> <li>• ピアオ信号発生器のSWEEP (High Composite APL: FULL) と BVS-V1201のIN3を接続し、75<math>\Omega</math> 終端抵抗器を一方のIN3につなぎます。</li> <li>• BVS-V1201のOUTコネクタとオシロスコプのCH-1を接続し、75<math>\Omega</math>終端抵抗器をつなぎます。</li> <li>• SW-354基板のスイッチ1を押します。</li> </ul>	<ul style="list-style-type: none"> <li>• 1MHz付近の出力レベルAを入力波形に対し、<math>\pm 7\text{mV}</math>の範囲に調整して下さい。 &lt;GAIN調整&gt;</li> <li>• 12MHz付近の出力レベルBを1MHz付近 (A) に対し、<math>\pm 22\text{mV}</math>の範囲に調整して下さい。 &lt;f 特調整&gt;</li> </ul> 	<ul style="list-style-type: none"> <li>● RV1/VSW-22 (GAIN調整)</li> <li>● CT1/VSW-22 (f 特調整)</li> </ul>



## SECTION 3

### ELECTRICAL ALIGNMENT

#### [Required Equipment]

- 75 $\Omega$  Terminator
- Oscilloscope : Must have 100 MHz or higher characteristic.
- Video Signal Generator: TEKTRONIX 1410 or the equivalent.

#### [Connection]

Connect the ※1 SWEEP Signal (※2 High ※3 Composite APL; ※4 PULL) of the CH-1 of the BVS-V1201.

Connect the 75 $\Omega$  terminator to the Oscilloscope.

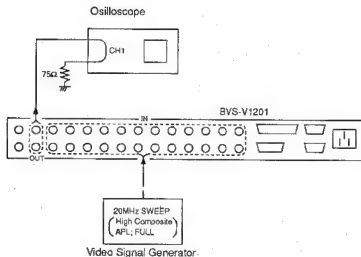
Then, confirm that the waveform is correct.

NOTE: ※1 SWEEP = SWEEP/MULTIBURST

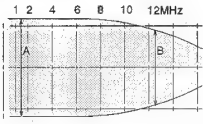
※2 High (20MHz) = FREQ RANGE

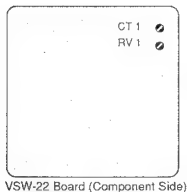
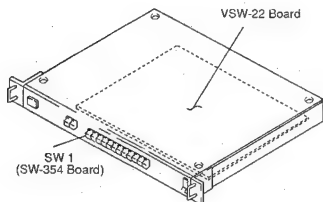
※3 Composite = COMPOSITE/CONTINUOUS

※4 FULL = AMPL



### 3-1. GAIN. FREQUENCY RESPONSE ADJUSTMENT

Machine conditions for adjustment	Specifications	Adjustment
<ul style="list-style-type: none"> <li>• Connect the SWEEP Signal (High Composite APL: FULL) of Video Signal Generator to the IN3 of BVS-V1201.</li> <li>• Connect the 75Ω terminator to the another IN3 of BVS-V1201.</li> <li>• Connect the CH-1 of the Oscilloscope to the OUTPUT connector of BVS-V1201, and connect the 75Ω terminator.</li> <li>• Push the Switch 1 of the SW-354 Board.</li> </ul>	<ul style="list-style-type: none"> <li>• Adjust output level A around the 1MHz within -7 to +7mV in compared with input waveform. &lt;GAIN adjustment&gt;</li> <li>• Adjust output level B around the 12MHz within -22 to +22 mV in compared with waveform around the 1MHz. &lt;FREQUENCY response adjustment&gt;</li> </ul> 	<ul style="list-style-type: none"> <li>● RV1/VSW-22 &lt;GAIN adjustment&gt;</li> <li>● CT1/VSW-22 &lt;FREQUENCY response adjustment&gt;</li> </ul>



OVERALL      OVERALL

MB-263





## SECTION 5 SEMICONDUCTOR ELECTRODES

ここに記載されている IC, トランジスタ, ダイオードは, それぞれの機能を等価的に表わしたものです。したがって互換性を表わすものではありません。(互換性のない型名が併記されている事もあります。) 部品の交換をする時は, SPARE PARTS の章を参照して下さい。

ICs, transistors and diodes whose functions are equivalent are described here. Therefore, incompatible device names may be described together. For parts replacement, refer to the Spare Parts section in this manual.

### IC PAGE

AM26LS30PC ..... 5-1  
AM26LS32PC ..... 5-1

CXD1095Q ..... 5-2  
CXK5864BP-10L ..... 5-2

HD64B180ROP ..... 5-3

LM1881M ..... 5-4

MBM27C256A-20CZ .. 5-4  
MN5514BS ..... 5-4

SN74HC00N ..... 5-4

SN74HC14NS ..... 5-4

SN74HC32N ..... 5-5

SN74HC74N ..... 5-5

SN74HC139NS ..... 5-5

SN74HC541N ..... 5-5

SN74HC4514NT ..... 5-5

SN74HC4515NT ..... 5-5

TC40175BF ..... 5-6

TC4023BF ..... 5-6

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TC74HC123F ..... 5-6

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TL7705CP-B ..... 5-6

### TRANSISTOR PAGE

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2SC1823 ..... 5-7

2SC2785-F ..... 5-7

2SC3545 ..... 5-7

DTC144VS ..... 5-7

FA1F4L-L30 ..... 5-7

### DIODE PAGE

1S2835-T1 ..... 5-7

1S2837-T1 ..... 5-7

1SS119 ..... 5-7

1SS123 ..... 5-7

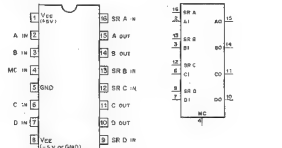
TLV123 ..... 5-7

### IC

AM26LS30PC (ADVANCED MICRO DEVICES)

LINE DRIVER

— TOP VIEW —

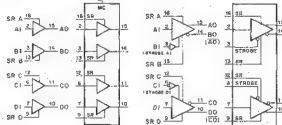


MC: MODE CONTROL

SR: SLEW RATE CONTROL

MC = 1

MC = 0



INPUTS OUTPUTS

MC(A TO D) A TO D

1 0 0

1 1 1

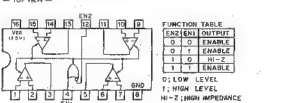
0: LOW LEVEL X: DON'T CARE

1: HIGH LEVEL H-Z: HIGH IMPEDANCE

AM26LS32PC (ADVANCED MICRO DEVICES)

HIGH SPEED DIFFERENTIAL LINE RECEIVER

— TOP VIEW —



FUNCTION TABLE

SENSE INPUT OUTPUT

0 0 ENABLE

0 1 ENABLE

1 0 HI-Z

1 1 ENABLE

0: LOW LEVEL

1: HIGH LEVEL

HI-Z: HIGH IMPEDANCE

SENSE INPUT VOLT

LESS ±100mV 2.7V

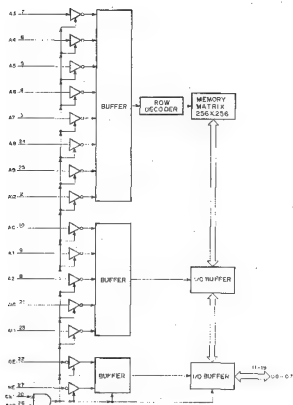
LESS ±500mV 2.5V

等価回路は IC メーカーの Data Book に従いました。

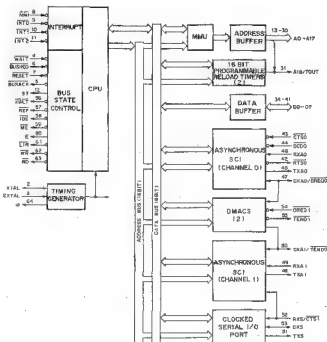
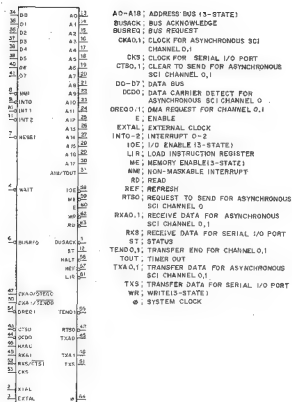
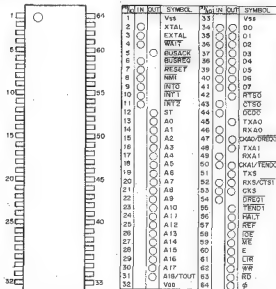
The circuit diagram of each IC is obtained from the IC data book published by the manufacturer.







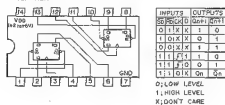
HD64080TOP (HITACHI) (8MHz)  
C-MOS 8-BIT MICROPROCESSOR  
— TOP VIEW —





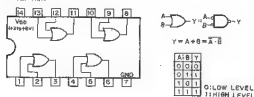
## SN74HC74N (T1)

CMOS D-TYPE FLIP FLOP WITH DIRECT SET/RESET  
— TOP VIEW —

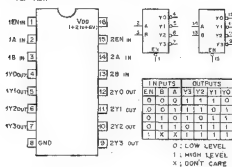


## SN74HC32N (T1)

CMOS 2-INPUT OR GATE  
— TOP VIEW —

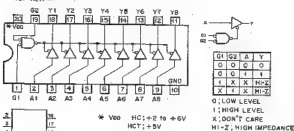
SN74HC193NS (T1) (V<sub>DD</sub> = +2 to +6V)

CMOS 3-OF-4 DECODER/DEMULTIPLEXER  
— TOP VIEW —



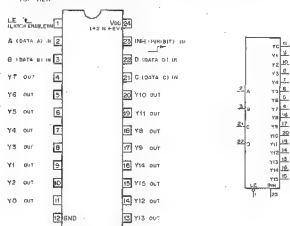
## SN74HC541N (T1)

CMOS BUFFERS AND LINE DRIVERS WITH 3-STATE OUTPUTS  
— TOP VIEW —



## SN74HC541ANT (T1) PLAT PACKAGE

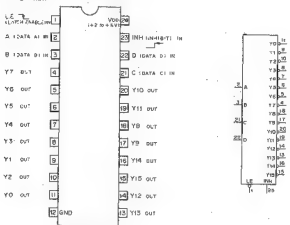
CMOS 4-LINE TO 16-LINE DECODER/DEMULTIPLEXER WITH ADDRESS LATCHES  
— TOP VIEW —



LATCHED DATA										SELECTED OUTPUTS									
ANH	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0																

## SN74HC541SNT (T1) PLAT PACKAGE

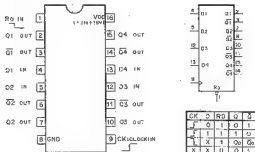
CMOS 4-LINE TO 16-LINE DECODER/DEMULTIPLEXER WITH ADDRESS LATCHES  
— TOP VIEW —



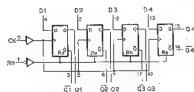
INH	LATCHED DATA				SELECTED				OUTPUTS											
	C	D	B	A	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	0	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	0	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
0	1	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
0	1	1	1	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
0	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1	X	X	X	X	ALL OUTPUTS = 0															

TC40178BP (TOSHIBA) FLAT PACKAGE

C-MOS D-TYPE FLIP-FLOP  
— TOP VIEW —

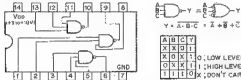


Q: LOW LEVEL  
1: HIGH LEVEL  
X: DON'T CARE



TC4023BP (TOSHIBA) FLAT PACKAGE

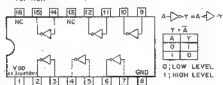
C-MOS 3-INPUT NAND GATE  
— TOP VIEW —



Y = A · B · C = A + B + C  
Q: LOW LEVEL  
1: HIGH LEVEL  
X: DON'T CARE

TC4049BP (TOSHIBA) FLAT PACKAGE

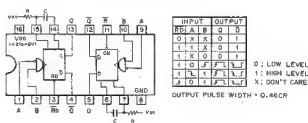
C-MOS INVERTING TYPE BUFFER/CONVERTER  
— TOP VIEW —



Y = A  
Q: LOW LEVEL  
1: HIGH LEVEL

TU74HC123F (TOSHIBA) FLAT PACKAGE

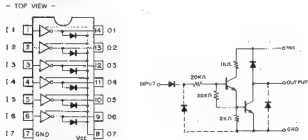
C-MOS DUAL RETRIGGERABLE MONOSTABLE MULTIVIBRATOR  
— TOP VIEW —



Q: LOW LEVEL  
1: HIGH LEVEL  
X: DON'T CARE  
OUTPUT PULSE WIDTH = 0.46CR

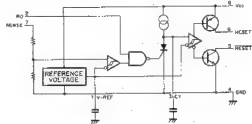
TU62200P (TOSHIBA)

LOW SATURATION DRIVER  
— TOP VIEW —



TL7705CP.B (TIS)

POWER VOLTAGE SUPERVISOR  
— TOP VIEW —



TRANSISTOR



2SA812



2SC2755



2SC3545



DTC144WS (R1=47K, R2=92K)



PA1F4L-L30 (R1=47K, R2=22K)



2SC1629

DIODE



1S2030-T1



1S2037-T1



1S5119



1S5123



TLV129; YELLOW

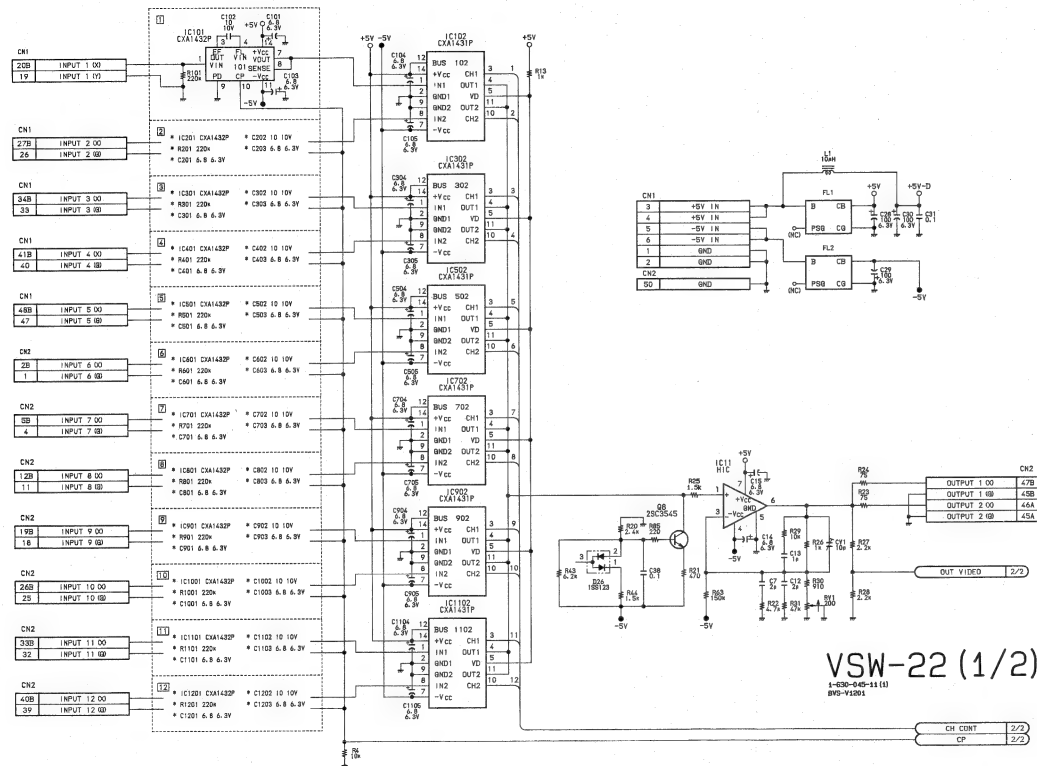
## SECTION 6 SCHEMATIC DIAGRAMS

### CIRCUIT FUNCTION OF THE SCHEMATIC DIAGRAMS

The circuit information is provided below.

CIRCUIT BOARD	CIRCUIT FUNCTION
IF-278	SERIAL INTERFACE BOARD
LE-76	LED BOARD
MB-263	MOTHER BOARD
RY-9	TALLY BOARD
SW-354	SWITCH BOARD
VSW-22	VIDEO SWITCH BOARD

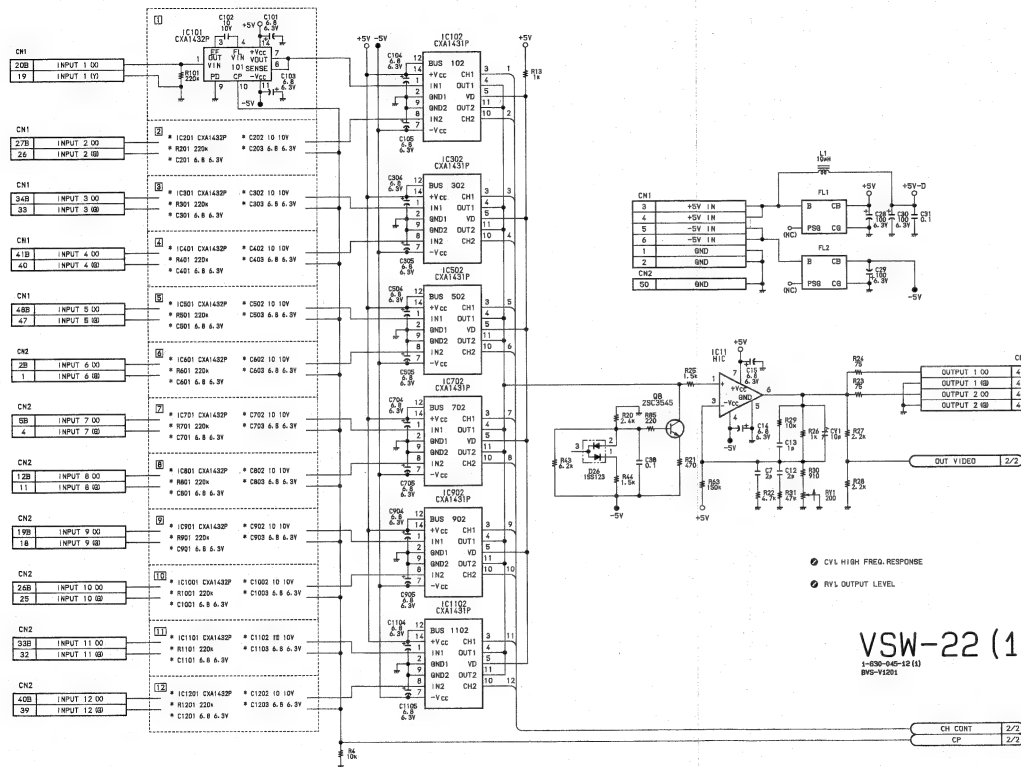
VSW-22 (1/2); VIDEO SWITCH BOARD	S/N 10001 TO 10020
----------------------------------	--------------------



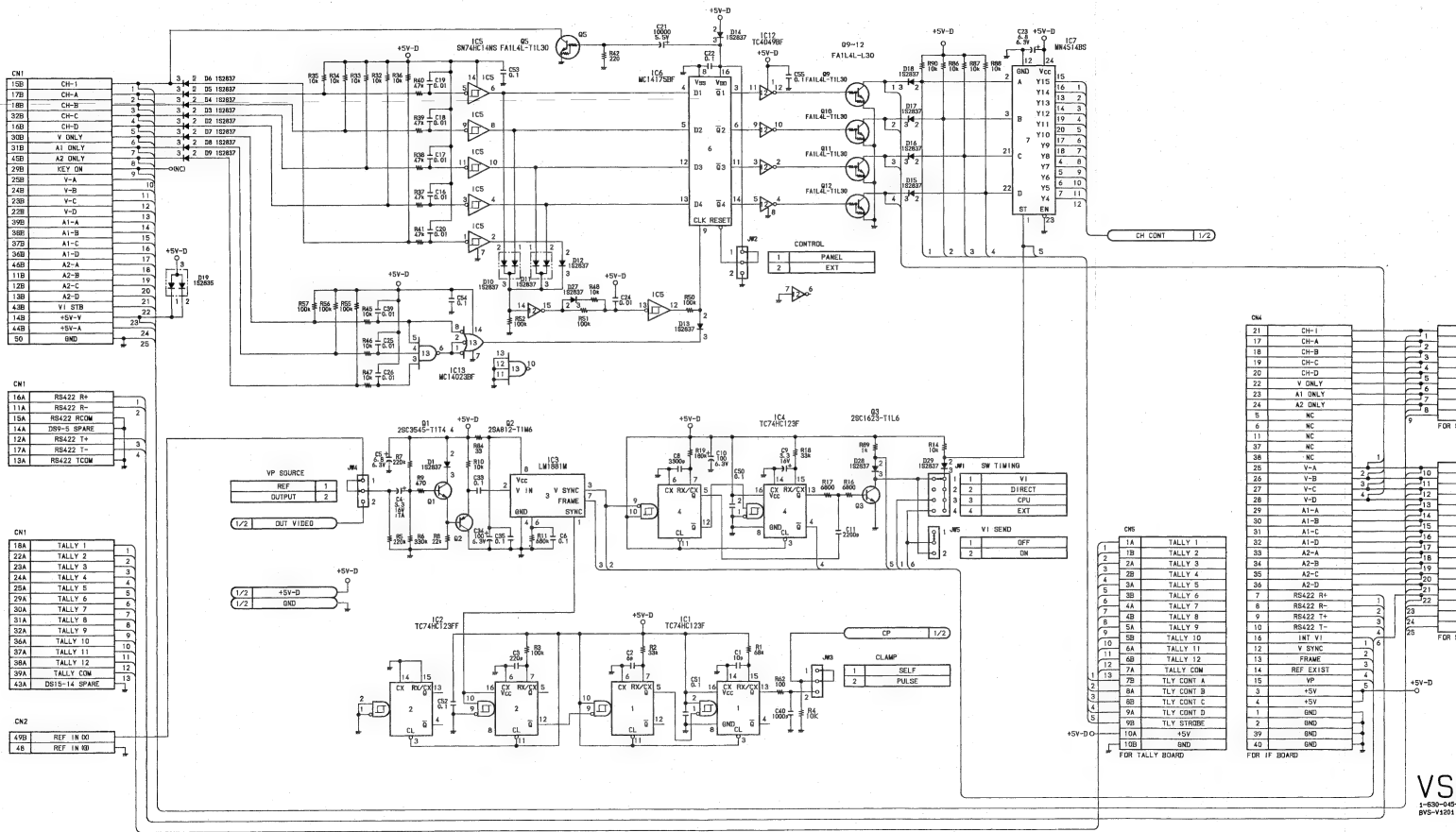




## VSW-22 (1/2): VIDEO SWITCH BOARD S/N 10021 AND HIGHER

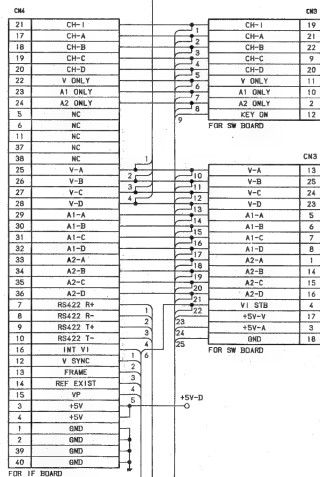
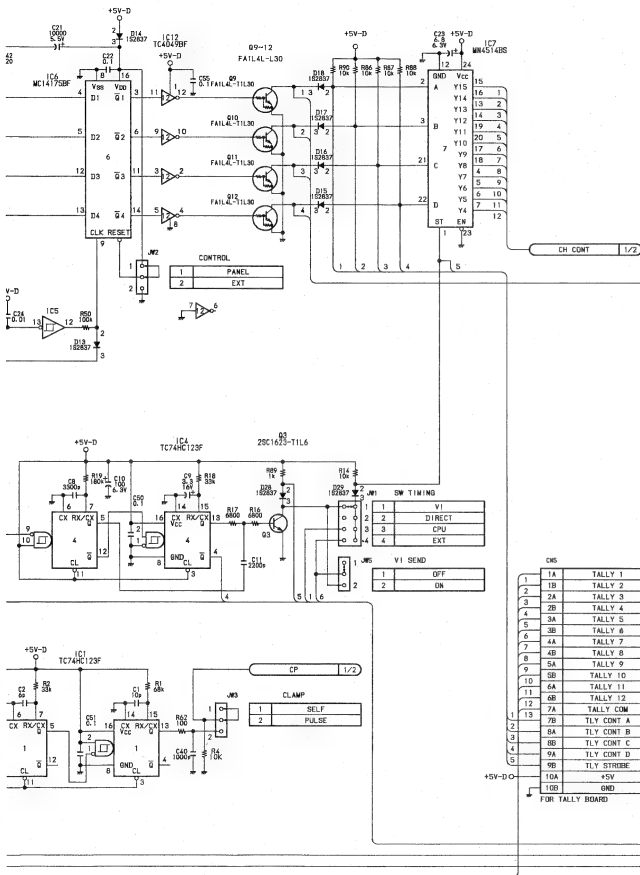


## VSW-22 (2/2) : VIDEO SWITCH BOARD S/N 10001 TO 10020



6-B (a)

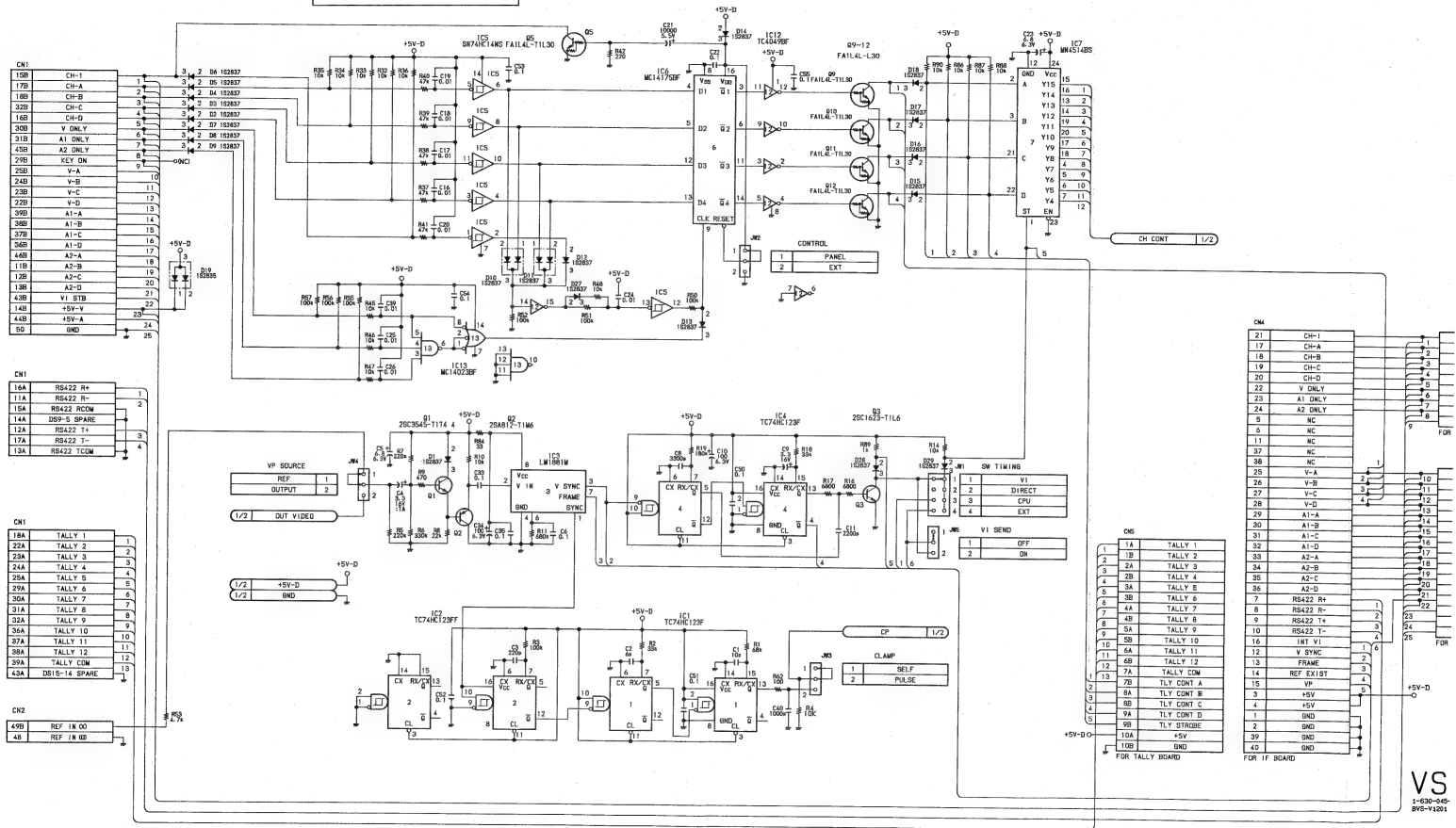
6-9 (a)



VSW-22 (2/2)

1-630-045-11 (1)  
MVS-V1201

VSW-22 (2/2); VIDEO SWITCH BOARD	S/N 10021 AND HIGHER
----------------------------------	----------------------



6-8 (b)

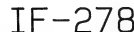
6-9 (b)

VS  
1-630-045-  
BVS-V1201





IF-278; SERIAL INTERFACE BOARD	S/N 10001 TO 10020
--------------------------------	--------------------

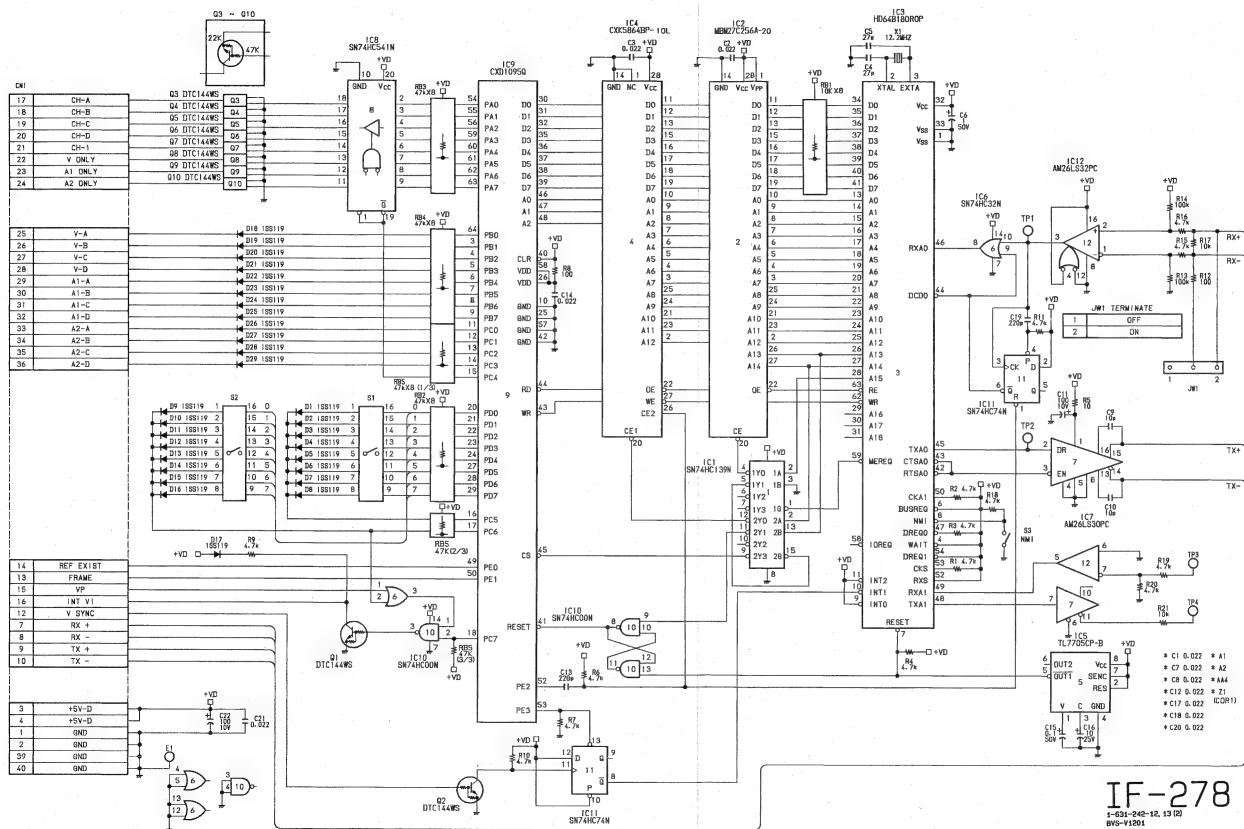


1-631-242-11 (1)  
BVS-A1201  
BVS-Y1201





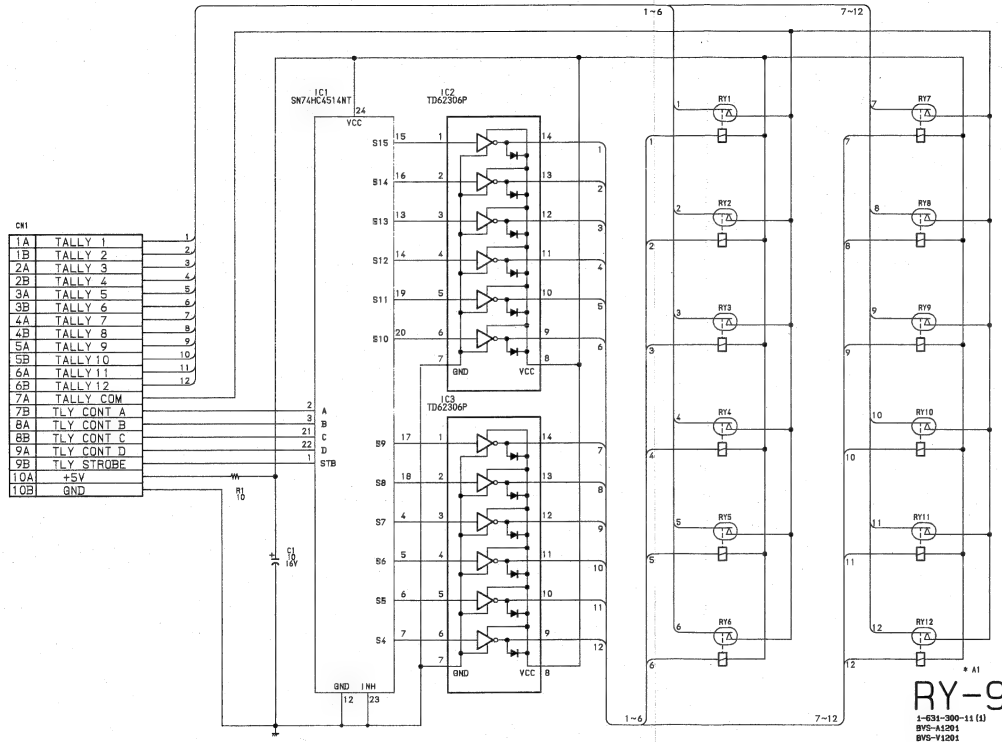
## IF-278; SERIAL INTERFACE BOARD S/N 10021 AND HIGHER



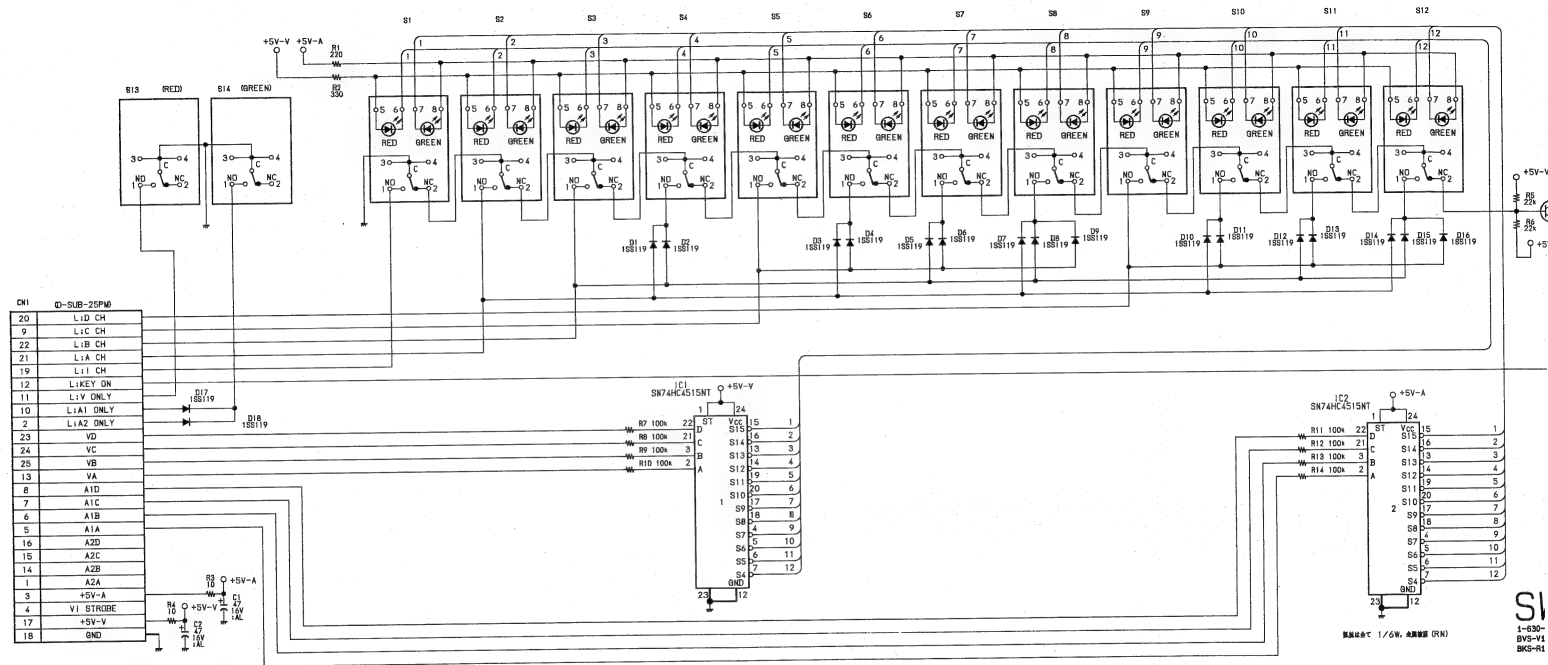
IF-278  
 1-501-240-12, 13 (2)  
 BVS-V1201

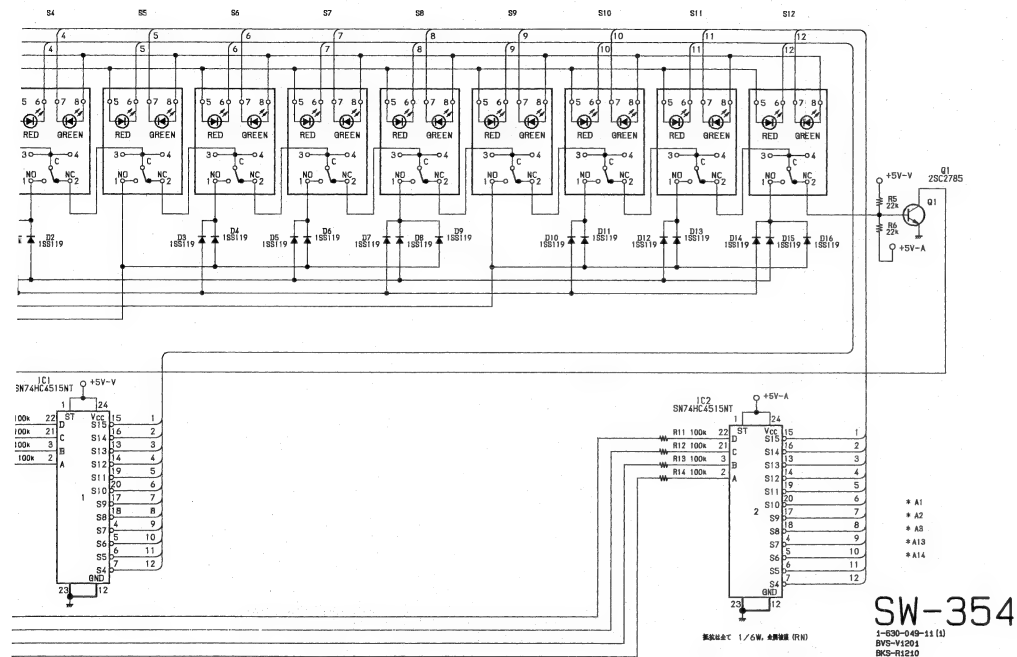


RY-9; TALLY BOARD



SW-354; SWITCH BOARD

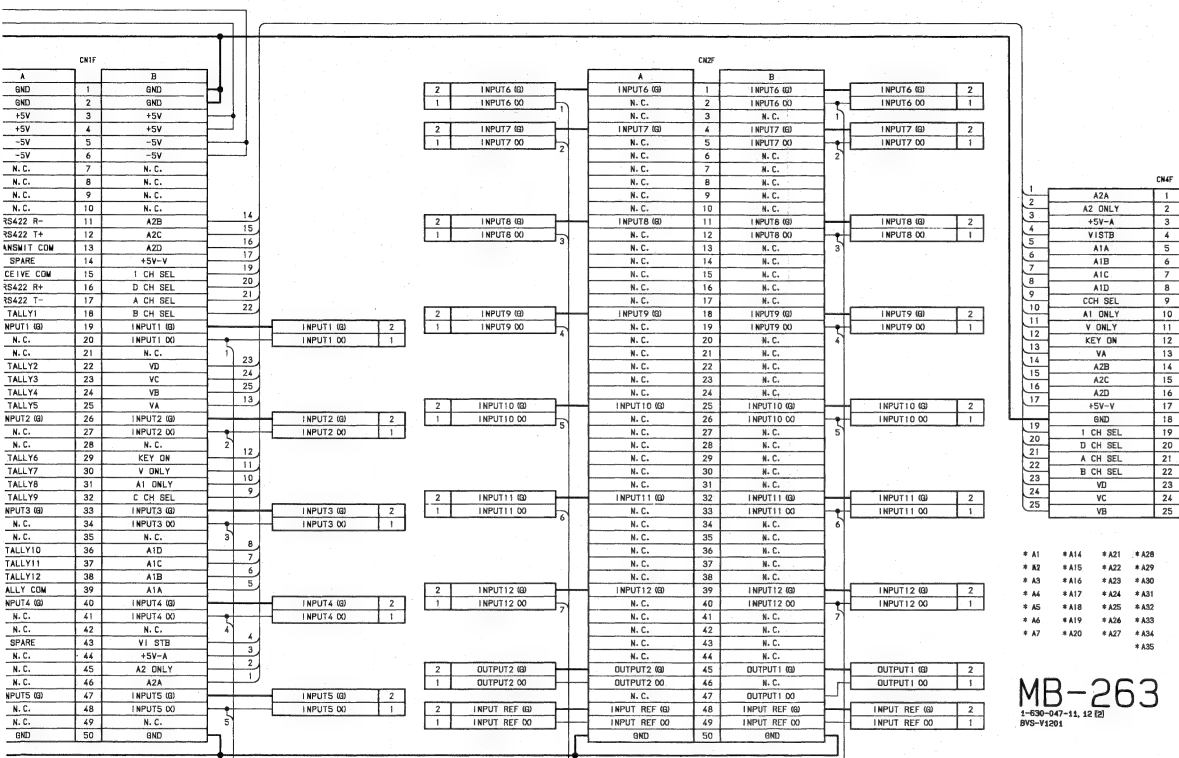




The diagram illustrates the electrical wiring for a 1967-1968 Ford Mustang, showing the connection of various components to a central chassis ground. The components are organized into several sections:

- Power Sources (Top Left):**
  - 1 -5V
  - 2 N.C.
  - 3 GND 1
  - 4 GND 2
  - 5 GND 3
  - 6 +5V
  - 7 +5V
- Chassis Grounding (Top Right):**
  - 1 GND 1
  - 2 GND 2
  - 3 GND 3
  - 4 +5V
  - 5 +5V
- Chassis Grounding (Bottom Left):**
  - 1 +5V
  - 2 N.C.
  - 3 GND
- Chassis Grounding (Bottom Right):**
  - 1 +5V
  - 2 N.C.
  - 3 GND
- Component Connections (Center):**

COMP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
FRAME GND	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
RS422 T-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
RS422 R+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
RECEIVE COM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
TRANSMIT COM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
RS422 T+	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
RS422 R-	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
FRAME GND	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31																			



MB-263

1-536-047-11, 12 @  
RVS-V1201

FRAME

FRAME FRAME

1

2

3

4

5

REMOTE 3  
FEMALE



EXT VIEW

REMOTE 1  
FEMALE



EXT VIEW



EXT VIEW

TALLY  
MALE



EXT VIEW

1	ACN
2	AZ ONLY
3	45V-A
4	V-10B
5	AIN
6	AID
7	AIC
8	ISD
9	CCN SEL
10	AI ONLY
11	V-10B
12	KEY ON
13	VA
14	ASB
15	AZC
16	AZD
17	45V-V
18	IND
19	I CH SEL
20	D CH SEL
21	A CH SEL
22	B CH SEL
23	VD
24	VC
25	VB

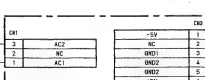
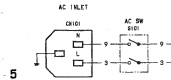
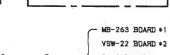
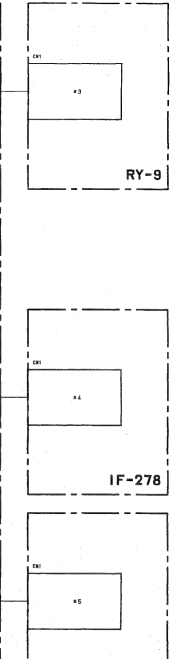
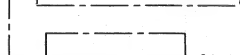
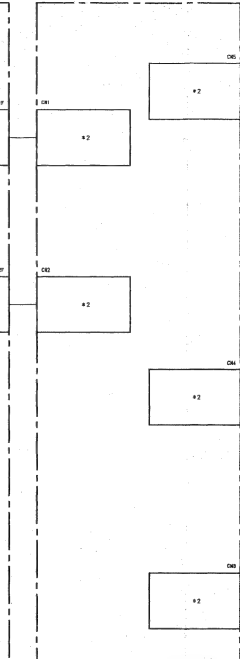
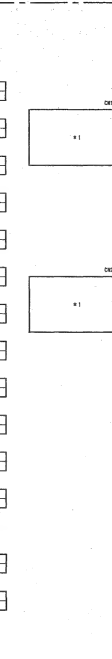
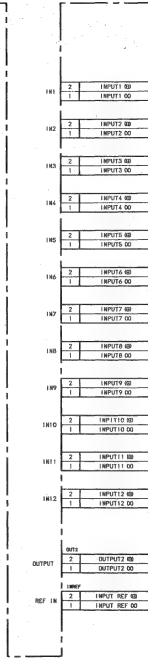
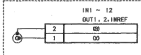
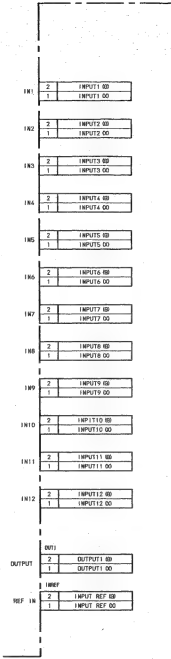
1	FRAME BND
2	RS422 1-
3	RS422 R+
4	RECEIVE COM
5	SPARE
6	TRANSMIT COM
7	RS422 1+
8	RS422 R-
9	FRAME BND

1	FRAME BND
2	RS422 1-
3	RS422 R+
4	RECEIVE COM
5	SPARE
6	TRANSMIT COM
7	RS422 1+
8	RS422 R-
9	FRAME BND

1	TALLY1
2	TALLY2
3	TALLY3
4	TALLY4
5	TALLY5
6	TALLY6
7	TALLY7
8	TALLY8
9	TALLY9
10	TALLY10
11	TALLY11
12	TALLY12
13	TALLY COM
14	SPARE
15	SW

1	-5V
2	NC
3	IND1
4	IND2
5	IND3
6	+5V
7	+5V

1	-5V
2	NC
3	IND1
4	IND2
5	IND3
6	+5V
7	+5V



SWITCHING REGULATOR

1	-5V
2	NC
3	IND

1	-5V
2	NC
3	IND

1	-5V
2	NC
3	IND

1	-5V
2	NC
3	IND

Refer to Schematic Diagram

FRAME  
895-11001





# SECTION 7

## PRINTED WIRING BOARDS

## VSW-22; VIDEO SWITCH BOARD

S/N 10001 TO 10020

BVS-V1201

VSW-22 (1-630-945-11)

CN1 A-4  
 CN2 A-10  
 CN3 N-10  
 CN4 M-9  
 CN5 F-3

CT1 B-12

D1 F-11

D2 F-3

D3 F-3

D4 F-3

D5 F-3

D6 F-3

D7 F-4

D8 F-3

D9 F-3

D10 F-6

D11 F-6

D12 F-6

D13 F-6

D14 F-5

D15 E-7

D16 E-6

D17 E-6

D18 E-6

D19 D-1

D20 C-12

D21 D-3

D22 E-7

D23 D-7

E1 E-1

E2 F-7

E3 E-11

FL1 B-1

FL2 A-1

IC1 F-9

IC2 E-10

IC3 E-11

IC4 F-8

IC5 E-3

IC6 F-5

IC7 E-6

IC11 B-11

IC12 E-5

IC13 E-4

IC101 C-3

IC102 C-4

IC201 C-4

IC301 C-4

IC302 C-5

IC401 C-5

IC501 C-6

IC601 C-6

IC701 C-7

IC702 C-8

IC801 C-8

IC901 C-8

IC902 C-9

IC1001 C-9

IC1101 C-10

IC1102 C-10

IC1201 C-10

JW1 D-8

JW2 F-5

JW3 D-9

JW4 E-11

JW5 E-8

Q1 F-11

Q2 F-11

Q3 E-8

Q4 F-4

Q5 E-5

Q6 C-12

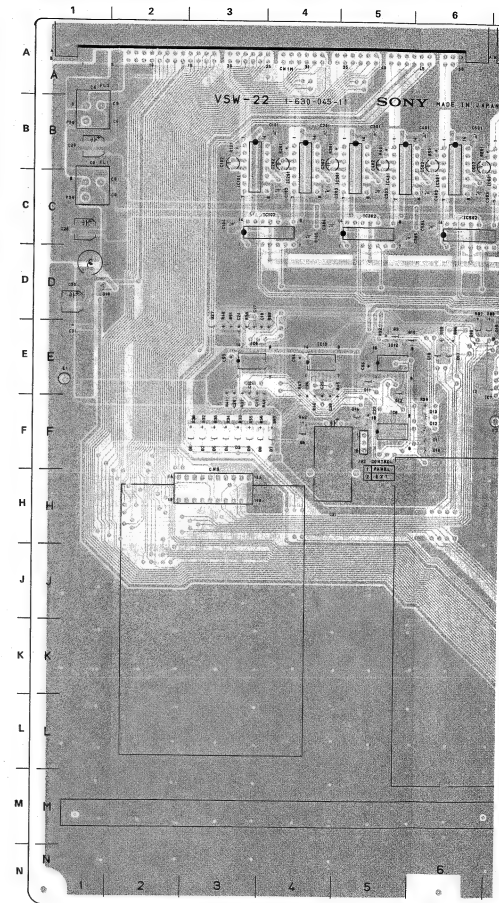
Q7 E-5

Q10 E-5

Q11 E-5

Q12 F-5

RV1 C-12



# VSW-22; VIDEO SWITCH BOARD

S/N 10001 TO 10020

BVS-V1201

VSW-22 (1-630-045-11)

CN1 A-4  
CN2 A-10  
CN3 N-10  
CN4 M-9  
CN5 F-3

CT1 B-12

D1 F-11

D2 F-3

D3 F-3

D4 F-3

D5 F-3

D6 F-3

D7 F-4

D8 F-3

D9 F-3

D10 F-6

D11 F-6

D12 F-6

D13 F-6

D14 F-5

D15 E-7

D16 E-6

D17 E-6

D18 E-6

D19 D-1

D20 C-12

D21 D-3

D22 E-7

D23 D-7

E1 E-1

E2 F-7

E3 E-11

FL1 B-1

FL2 A-1

IC1 F-9

IC2 E-10

IC3 E-11

IC4 F-8

IC5 E-3

IC6 F-5

IC7 E-6

IC11 B-11

IC12 E-5

IC13 E-4

IC101 C-3

IC102 C-4

IC201 C-4

IC201 C-4

IC202 C-5

IC201 C-5

IC201 C-6

IC201 C-6

IC201 C-7

IC201 C-8

IC201 C-8

IC201 C-9

IC1001 C-9

IC1101 C-10

IC1102 C-10

IC1201 C-10

JW1 D-8

JW2 F-5

JW3 D-9

JW4 F-11

JW5 E-8

Q1 F-11

Q2 F-11

Q3 E-8

Q4 F-4

Q5 C-12

Q6 E-5

Q7 E-5

Q8 E-5

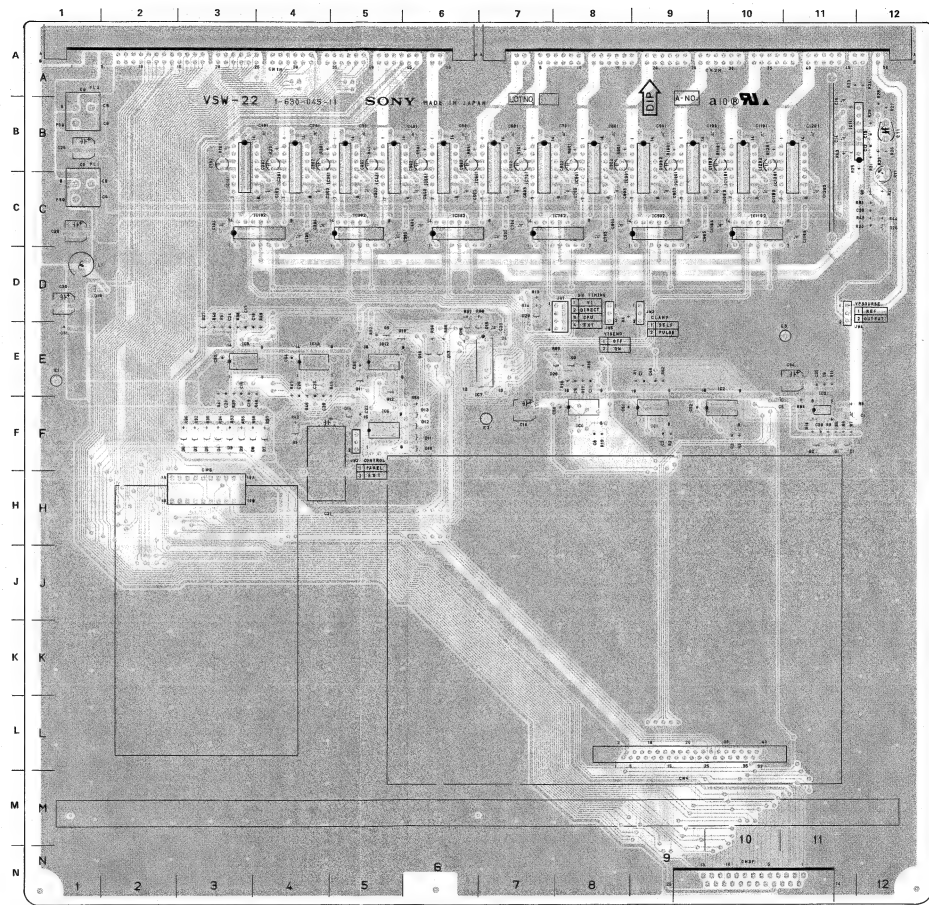
Q9 E-5

Q10 E-5

Q11 E-5

Q12 F-5

RV1 C-12



VSW-22 - COMPONENT SIDE-  
1-630-045-11 (1)  
BVS-V1201

## VSW-22: VIDEO SWITCH BOARD

S/N 10021 AND HIGHER

BVS-V1201

VSW-22 (1-630-045-12)

CN1 A - 4

CN2 A - 10

CN3 N - 10

CN4 M - 9

CN5 H - 3

CV1 B - 12

D1 F - 11

D2 F - 3

D3 F - 3

D4 F - 3

D5 F - 3

D6 F - 3

D7 F - 4

D8 F - 3

D9 F - 3

D10 F - 6

D11 F - 6

D12 F - 6

D13 F - 6

D14 F - 5

D15 E - 7

D16 E - 6

D17 E - 6

D18 E - 6

D19 D - 1

D20 D - 12

D27 D - 3

D28 E - 7

D29 D - 7

E1 E - 1

E2 F - 7

E3 E - 11

FL1 B - 1

FL2 A - 1

IC1 F - 9

IC2 E - 10

IC3 E - 11

IC4 F - 8

IC5 E - 3

IC6 F - 5

IC7 E - 6

IC11 B - 11

IC12 E - 5

IC13 E - 4

IC101 C - 8

IC102 C - 4

IC201 C - 4

IC301 C - 4

IC302 C - 5

IC401 C - 5

IC501 C - 6

IC502 C - 6

IC601 C - 6

IC701 C - 7

IC702 C - 8

IC801 C - 8

IC801 C - 8

IC802 C - 9

IC1001 C - 9

IC1101 C - 10

IC1102 C - 10

IC1201 C - 10

JW1 D - 8

JW2 F - 5

JW3 D - 9

JW4 E - 11

JW5 E - 8

Q1 F - 11

Q2 F - 11

Q3 E - 8

Q4 F - 4

Q8 C - 12

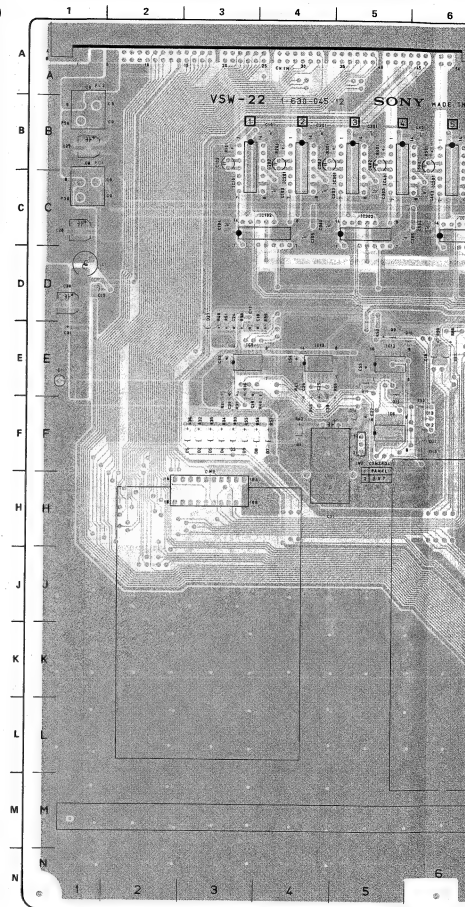
Q9 E - 5

Q10 E - 5

Q11 E - 5

Q12 F - 5

RV1 C - 12



## VSW-22; VIDEO SWITCH BOARD

S/N 10021 AND HIGHER

BVS-V1201

VSW-22 (1-630-045-12)

CN1 A-4

CN2 A-10

CN3 N-10

CN4 M-9

CN5 H-3

CV1 B-12

D1 F-11

D2 F-3

D3 F-3

D4 F-3

D5 F-3

D6 F-3

D7 F-4

D8 F-3

D9 F-6

D10 F-6

D11 F-6

D12 F-6

D13 F-6

D14 F-5

D15 E-7

D16 E-6

D17 E-6

D18 E-6

D19 D-1

D20 D-12

D21 D-3

D22 E-7

D23 D-7

E1 E-1

E2 F-7

E3 E-11

FL1 B-1

FL2 A-1

IC1 F-9

IC2 E-10

IC3 E-11

IC4 F-8

IC5 E-3

IC6 F-5

IC7 E-6

IC11 B-11

IC12 E-5

IC13 E-4

IC101 C-3

IC102 C-4

IC201 C-4

IC301 C-4

IC302 C-5

IC401 C-5

IC501 C-6

IC502 C-6

IC601 C-6

IC701 C-7

IC102 C-8

IC801 C-8

IC801 C-8

IC901 C-8

IC1001 C-9

IC1101 C-10

IC1102 C-10

IC1201 C-10

JW1 D-8

JW2 F-5

JW3 D-9

JW4 E-11

JW5 E-8

Q1 F-11

Q2 F-11

Q3 E-8

Q5 F-4

Q8 C-12

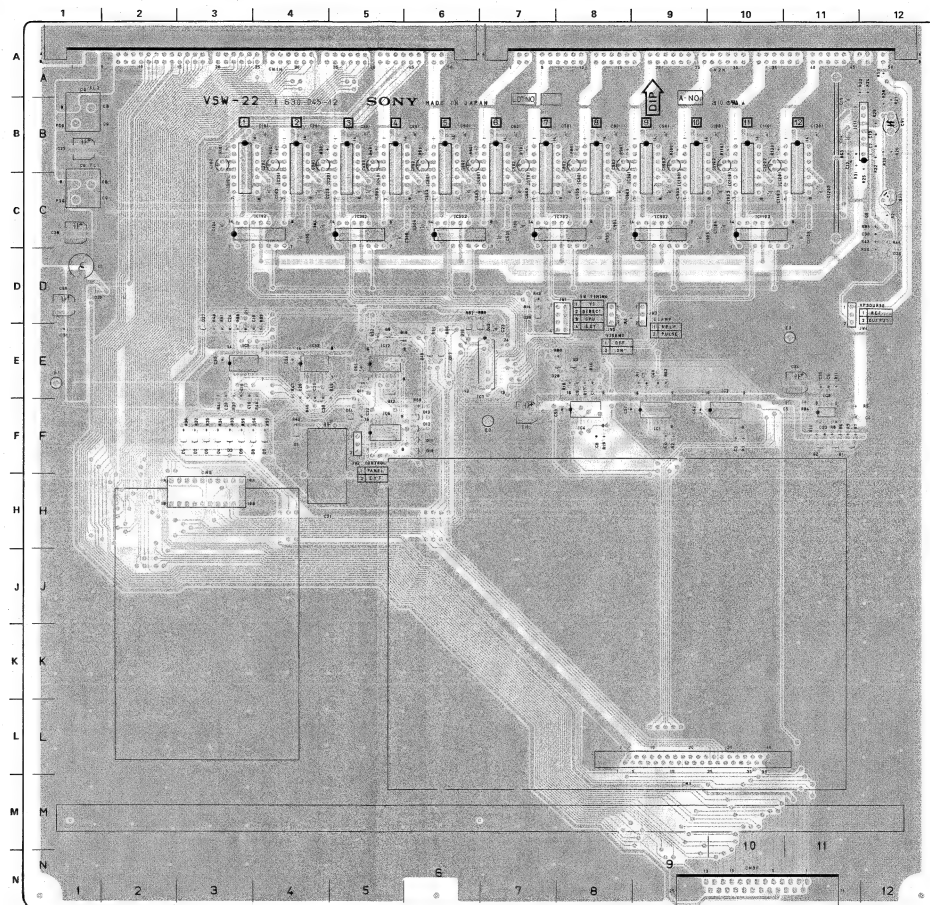
Q9 E-5

Q10 E-5

Q11 E-5

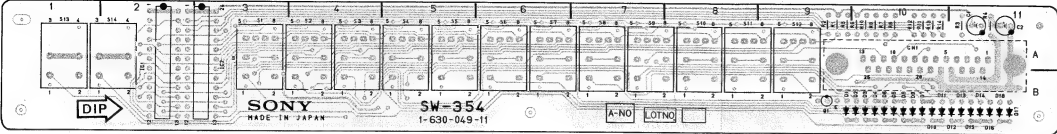
Q12 F-5

RV1 C-12

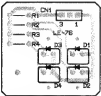


VSW-22 -COMPONENT SIDE-  
1-630-045-12 (1)  
BVS-V1201

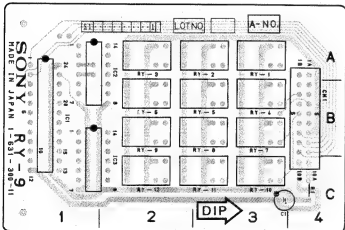
SW-354; SWICH BOARD  
 LE-76; LED BOARD  
 RY-9; TALLY BOARD



**SW-354 -COMPONENT SIDE-**  
 1-630-049-11 (1)  
 BYS-V1201  
 BKS-R1210



**LE-76**  
 -COMPONENT SIDE-  
 1-631-489-11 (1)  
 BYS-A1201  
 BYS-V1201  
 BYS-A1212  
 BYS-V1212

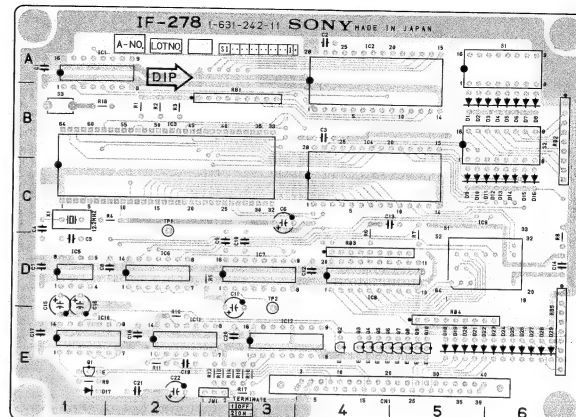


**RY-9 -COMPONENT SIDE-**  
 1-631-300-11 (1)  
 BYS-V1201



IF-278; SERIAL INTERFACE BOARD

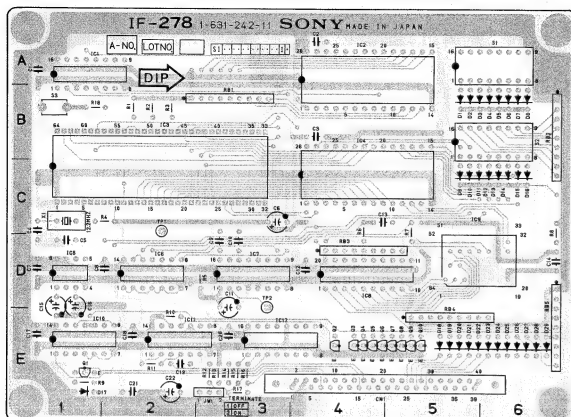
S/N 10001 TO 10020



IF-278 -COMPONENT SIDE-  
1-631-242-11 (1)  
BVS-V1201  
BVS-V1201

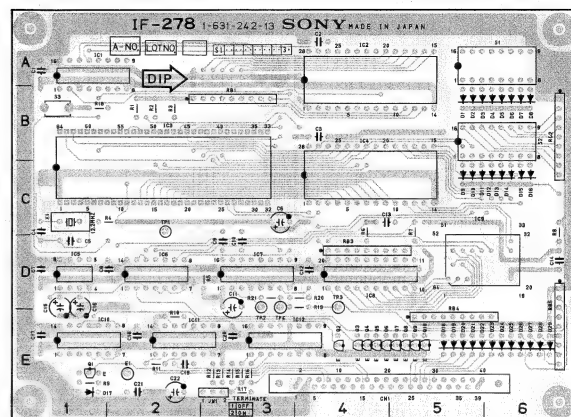


S/N 10001 TO 10020



IF-278 -COMPONENT SIDE-  
1-631-242-11 (1)  
BVS-A1201  
BVS-V1201

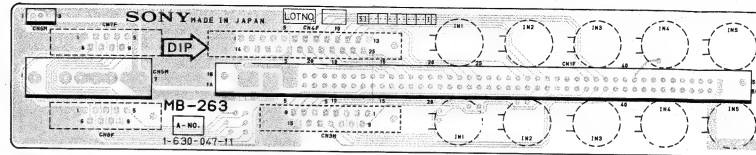
S/N 10021 AND HIGHER



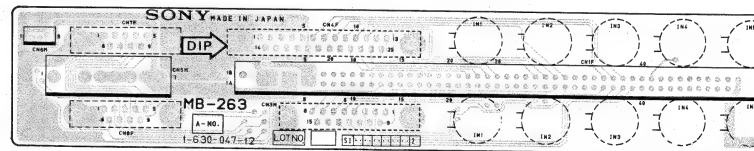
IF-278 -COMPONENT SIDE-  
1-631-242-13 (1)  
BVS-A1201  
BVS-V1201

MB-263 MB-263

MB-263; MOTHER BOARD	S/N 10001 TO 10020
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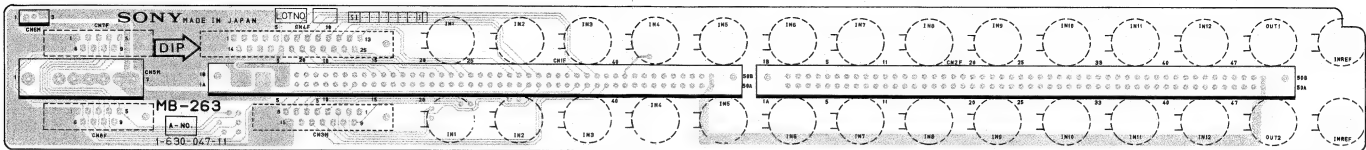


S/N 10021 AND HIGHER



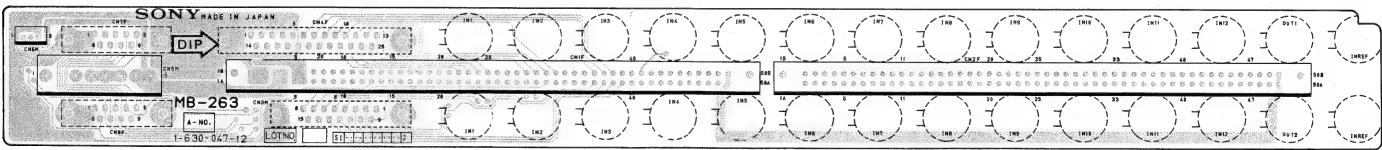
MB-263; MOTHER BOARD

S/N 10001 TO 10020



**MB-263** -COMPONENT SIDE-  
1-630-047-11 (1)  
BVS-V1201

S/N 10021 AND HIGHER



**MB-263** -COMPONENT SIDE-  
1-630-047-12 (1)  
BVS-V1201

## SECTION 8

### SPARE PARTS AND FIXTURE

#### 8-1. PARTS INFORMATION

- (1) The shaded and  $\Delta$ -marked components are critical to safety.

Replace only with the same components as specified.

- (2) Replacement parts supplied from the Sony Parts Center will sometimes have a different shape and outside view from the parts which are used in the unit. This is due to "accommodating improved parts and/or engineering changes" or "standardization of genuine parts".

This manual's exploded views and electrical spare parts lists indicate the part numbers of "the present standardized genuine parts".

Regarding engineering part changes by our engineering department, refer to Sony service bulletins and service manual supplements.

- (3) The parts marked with "s" in the SP column of the exploded views and electrical spare parts lists are normally stocked for replacement purposes. The parts marked with "o" in the SP column are not normally required for routine service work. Orders for parts marked with "o" will be processed, but allow for additional delivery time.

- (4) Item with no part number and/or no description are not stocked because they are seldom required for routine service.

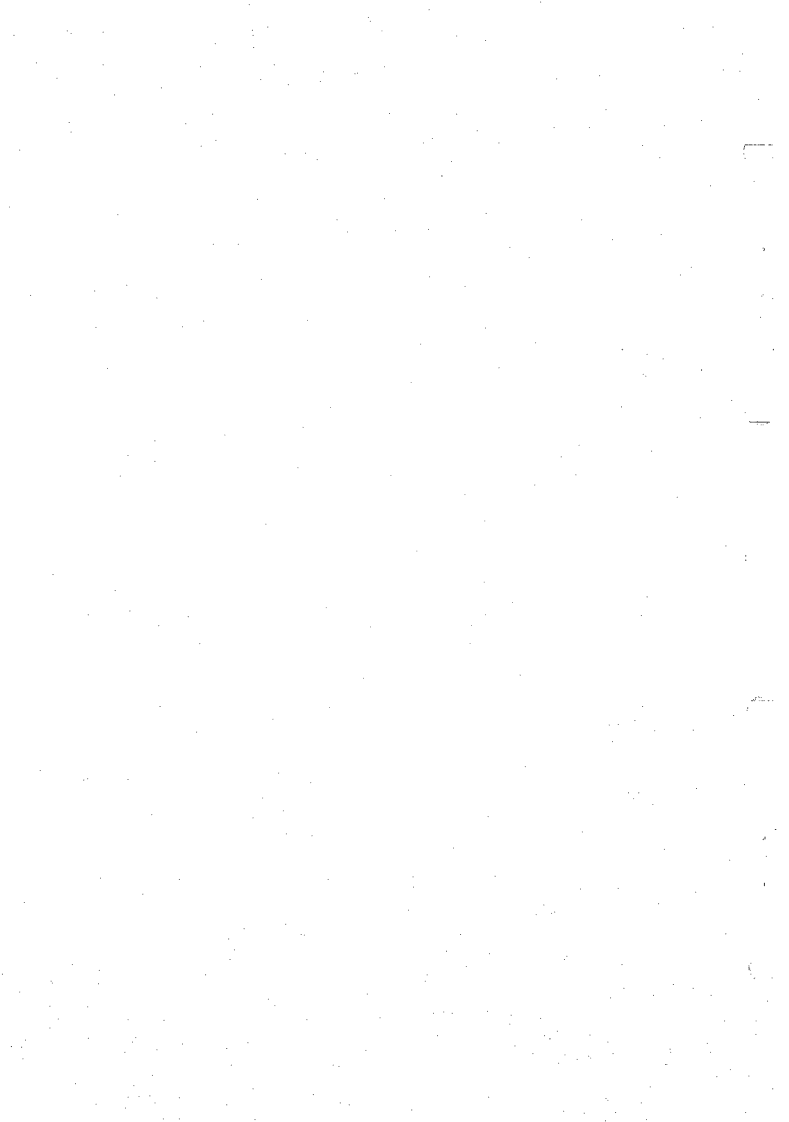
- (5) ( T ) after a spring description is shown on the exploded views in order to indicate the number of a spring turn required for the use.  
(Example)

Spring, tension (24T); This spring must be cut at its 24th turn for actual use.

#### 8-2. EXPLODED VIEW

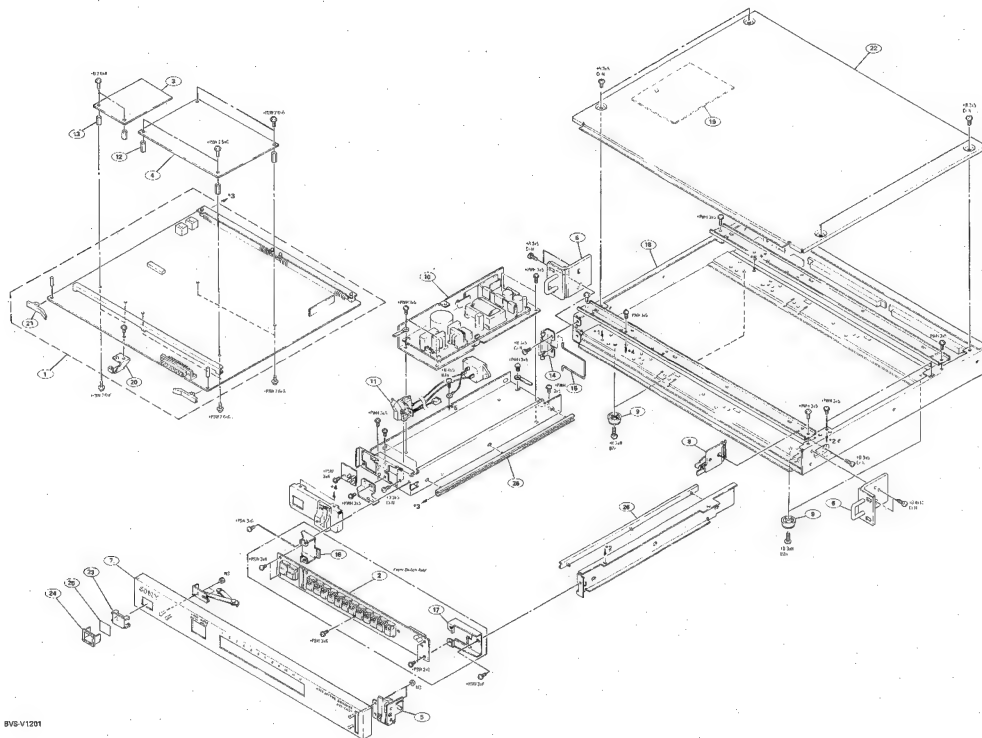
- . Exploded views are composed of the following blocks.

- (1) Chassis
- (2) Rear Panel



# CHASSIS CHASSIS

## Chassis



BVG-V1201

No.	Part No.	SP Description
1	A-6257-241-A	o MOUNTED CIRCUIT BOARD, VSM-22
2	A-6267-176-A	o MOUNTED CIRCUIT BOARD, SW-354
3	A-6267-181-A	o MOUNTED CIRCUIT BOARD, RT-9
4	A-6267-182-A	o MOUNTED CIRCUIT BOARD, IF-278
5	A-6279-484-A	o HANDLE ASSY, DOOR
6	X-2127-214-1	o ANGLE (1U) ASSY, RACK
7	X-2127-215-1	o PANEL (1U) ASSY, F
8	X-2127-216-1	o LOCK ASSY, MF
9	X-3556-910-1	s FOOT ASSY, MF
10	1-413-462-11	s REGULATOR, SWITCHING (ED-111)
11	1-570-384-11	s SWITCH, ROCKER (AC POWER)
12	2-130-288-01	o SUPPORT
13	2-130-288-21	o SUPPORT
14	2-130-290-01	o HINGE (1U)
15	2-130-291-01	o SHAFT (1U), HINGE
16	2-130-292-01	o PLATE (LEFT), FIXED, SW
17	2-130-293-01	o PLATE (RIGHT), FIXED, SW
18	2-139-002-01	o CHASSIS, 1U
19	2-139-022-01	o SHEET, INSULATING
20	2-139-085-01	o PLATE, FIXED, SW
21	2-182-909-02	o LEVER, PRINTED CIRCUIT BOARD
22	2-182-935-02	o PLATE (D350), TOP
23	2-249-303-01	o WINDOW (2), REMOTE CONTROL
24	2-249-304-02	o FRAME (2), WINDOW, REMOTE CONTROL
25	2-249-353-01	o COVER, LAMP
26	3-673-676-32	o RAIL, PRINTED CIRCUIT BOARD GUIDE

## REAR PANEL

### Rear Panel

No.	Part No.	SP Description
101	A-6274-293-A	o PANEL (V1) ASSY, REAR
102	X-2068-004-1	s TERMINAL ASSY
103	1-561-336-41	s CONNECTOR, COAXIAL
104	2-068-008-01	s WASHER
105	2-990-241-01	o HOLDER (A), PLUG



### 8-3. ELECTRICAL PARTS LIST

#### ABBREVIATIONS

Ref. No.	Description	Ref. No.	Description	Ref. No.	Description
C□□, CT□□	CAPACITOR	IC□□	IC	Q□□	TRANSISTOR
CF□□	CERAMIC FILTER	J□□	JACK	R□□, RV□□	RESISTOR
CN□□	CONNECTOR	L□□	INDUCTOR	RY□□	RELAY
D□□	DIODE	M□□	MOTOR	S□□, SW□□	SWITCH
DL□□	DELAY LINE	ME□□	METER	SB□□	SOLAR BATTERY
F□□	FUSE	MIC□□	MICROPHONE	T□□	TRANSFORMER
FB□□	FERRITE BEAD	PG□□	PG COIL	TH□□	THERMISTOR
FL□□	FILTER	PL□□	LAMP	X□□	CRYSTAL
H□□	HEAD	PM□□	SOLENOID		

All capacitors are in micro farads unless otherwise specified.

All inductors are in micro henries unless otherwise specified.

All resistors are in ohms.



# General Purpose Electrical Parts List

Parts that are not listed in the "reference numbers order list" are shown in following list.  
Reference numbers are omitted.

## CAPACITOR, CERAMIC

### Part No. SP Description

1-163-083-00	s	CAP, CHIP CERAMIC	1pF	±0.25pF	5
1-163-085-00	s	CAP, CHIP CERAMIC	2pF	±0.25pF	5
1-163-087-00	s	CAP, CHIP CERAMIC	4pF	±0.25pF	5
1-163-089-00	s	CAP, CHIP CERAMIC	6pF	±0.5pF	50
1-163-091-00	s	CAP, CHIP CERAMIC	8pF	±0.5pF	50
1-163-093-00	s	CAP, CHIP CERAMIC	10pF		5% 50V
1-163-097-00	s	CAP, CHIP CERAMIC	15pF		5% 50V
1-163-101-00	s	CAP, CHIP CERAMIC	22pF		5% 50V
1-163-105-00	s	CAP, CHIP CERAMIC	33pF		5% 50V
1-163-109-00	s	CAP, CHIP CERAMIC	47pF		5% 50V
1-163-113-00	s	CAP, CHIP CERAMIC	68pF		5% 50V
1-163-117-00	s	CAP, CHIP CERAMIC	100pF		5% 50V
1-163-121-00	s	CAP, CHIP CERAMIC	150pF		5% 50V
1-163-125-00	s	CAP, CHIP CERAMIC	220pF		5% 50V
1-163-129-00	s	CAP, CHIP CERAMIC	330pF		5% 50V
1-163-133-00	s	CAP, CHIP CERAMIC	470pF		5% 50V
1-163-137-00	s	CAP, CHIP CERAMIC	680pF		5% 50V
1-163-141-00	s	CAP, CHIP CERAMIC	1000pF		5% 50V
1-163-145-00	s	CAP, CHIP CERAMIC	1500pF		10% 50V
1-163-013-00	s	CAP, CHIP CERAMIC	2200pF		10% 50V
1-163-015-00	s	CAP, CHIP CERAMIC	3300pF		10% 50V
1-163-017-00	s	CAP, CHIP CERAMIC	4700pF		10% 50V
1-163-019-00	s	CAP, CHIP CERAMIC	6900pF		10% 50V
1-163-021-00	s	CAP, CHIP CERAMIC	0.01		10% 50V
1-163-023-00	s	CAP, CHIP CERAMIC	0.015		10% 50V
1-163-034-00	s	CAP, CHIP CERAMIC	0.033		50V
1-163-035-00	s	CAP, CHIP CERAMIC	0.047		50V
1-163-036-00	s	CAP, CHIP CERAMIC	0.068		50V
1-163-038-00	s	CAP, CHIP CERAMIC	0.1		50V

## CAPACITOR, CHIP TANTALUM

### Part No. SP Description

1-135-070-00	s	CAP, CHIP TANTALUM	0.1	10%	35V
1-135-071-21	s	CAP, CHIP TANTALUM	0.15	10%	35V
1-135-072-21	s	CAP, CHIP TANTALUM	0.22	10%	35V
1-135-073-00	s	CAP, CHIP TANTALUM	0.33	10%	35V
1-135-083-00	s	CAP, CHIP TANTALUM	0.47	10%	25V
1-135-074-21	s	CAP, CHIP TANTALUM	0.47	10%	35V
1-135-087-21	s	CAP, CHIP TANTALUM	0.68	10%	20V
1-135-075-21	s	CAP, CHIP TANTALUM	0.68	10%	35V
1-135-091-21	s	CAP, CHIP TANTALUM	1.0	10%	16V
1-135-076-21	s	CAP, CHIP TANTALUM	1.0	10%	35V
1-135-084-21	s	CAP, CHIP TANTALUM	1.5	10%	25V
1-135-077-21	s	CAP, CHIP TANTALUM	1.5	10%	35V
1-135-088-21	s	CAP, CHIP TANTALUM	2.2	10%	20V
1-135-078-21	s	CAP, CHIP TANTALUM	2.2	10%	35V
1-135-092-21	s	CAP, CHIP TANTALUM	3.3	10%	16V
1-135-079-21	s	CAP, CHIP TANTALUM	3.3	10%	35V
1-135-096-21	s	CAP, CHIP TANTALUM	4.7	10%	10V
1-135-085-21	s	CAP, CHIP TANTALUM	4.7	10%	25V
1-135-100-21	s	CAP, CHIP TANTALUM	6.8	10%	6.3V
1-135-089-21	s	CAP, CHIP TANTALUM	6.8	10%	20V
1-135-093-21	s	CAP, CHIP TANTALUM	10	10%	16V
1-135-097-21	s	CAP, CHIP TANTALUM	15	10%	10V
1-135-101-21	s	CAP, CHIP TANTALUM	22	10%	6.3V
1-135-098-21	s	CAP, CHIP TANTALUM	47	10%	6.3V

## RESISTOR, CHIP METAL

## Part No. SP Description

1-216-603-11 s RES, CHIP METAL 10 1% 1/10W  
 1-216-605-11 s RES, CHIP METAL 12 1% 1/10W  
 1-216-609-11 s RES, CHIP METAL 18 1% 1/10W  
 1-216-611-11 s RES, CHIP METAL 22 1% 1/10W  
 1-216-614-11 s RES, CHIP METAL 30 1% 1/10W

1-216-617-11 s RES, CHIP METAL 39 1% 1/10W  
 1-216-619-11 s RES, CHIP METAL 47 1% 1/10W  
 1-216-620-11 s RES, CHIP METAL 51 1% 1/10W  
 1-216-623-11 s RES, CHIP METAL 68 1% 1/10W  
 1-216-624-11 s RES, CHIP METAL 75 1% 1/10W

1-216-625-11 s RES, CHIP METAL 82 1% 1/10W  
 1-216-626-11 s RES, CHIP METAL 91 1% 1/10W  
 1-216-627-11 s RES, CHIP METAL 100 1% 1/10W  
 1-216-629-11 s RES, CHIP METAL 120 1% 1/10W  
 1-216-631-11 s RES, CHIP METAL 150 1% 1/10W

1-216-633-11 s RES, CHIP METAL 180 1% 1/10W  
 1-216-634-11 s RES, CHIP METAL 200 1% 1/10W  
 1-216-635-11 s RES, CHIP METAL 220 1% 1/10W  
 1-216-636-11 s RES, CHIP METAL 240 1% 1/10W  
 1-216-637-11 s RES, CHIP METAL 270 1% 1/10W

1-216-638-11 s RES, CHIP METAL 300 1% 1/10W  
 1-216-639-11 s RES, CHIP METAL 330 1% 1/10W  
 1-216-640-11 s RES, CHIP METAL 360 1% 1/10W  
 1-216-641-11 s RES, CHIP METAL 390 1% 1/10W  
 1-216-642-11 s RES, CHIP METAL 430 1% 1/10W

1-216-643-11 s RES, CHIP METAL 470 1% 1/10W  
 1-216-644-11 s RES, CHIP METAL 510 1% 1/10W  
 1-216-645-11 s RES, CHIP METAL 560 1% 1/10W  
 1-216-647-11 s RES, CHIP METAL 680 1% 1/10W  
 1-216-648-11 s RES, CHIP METAL 750 1% 1/10W

1-216-649-11 s RES, CHIP METAL 820 1% 1/10W  
 1-216-650-11 s RES, CHIP METAL 910 1% 1/10W  
 1-216-651-11 s RES, CHIP METAL 1.0k 1% 1/10W  
 1-216-652-11 s RES, CHIP METAL 1.1k 1% 1/10W  
 1-216-653-11 s RES, CHIP METAL 1.2k 1% 1/10W

1-216-655-11 s RES, CHIP METAL 1.5k 1% 1/10W  
 1-216-656-11 s RES, CHIP METAL 1.6k 1% 1/10W  
 1-216-657-11 s RES, CHIP METAL 1.8k 1% 1/10W  
 1-216-658-11 s RES, CHIP METAL 2k 1% 1/10W  
 1-216-659-11 s RES, CHIP METAL 2.2k 1% 1/10W

1-216-660-11 s RES, CHIP METAL 2.4k 1% 1/10W  
 1-216-661-11 s RES, CHIP METAL 2.7k 1% 1/10W  
 1-216-662-11 s RES, CHIP METAL 3k 1% 1/10W  
 1-216-663-11 s RES, CHIP METAL 3.3k 1% 1/10W  
 1-216-664-11 s RES, CHIP METAL 3.5k 1% 1/10W

1-216-665-11 s RES, CHIP METAL 3.9k 1% 1/10W  
 1-216-666-11 s RES, CHIP METAL 4.3k 1% 1/10W  
 1-216-667-11 s RES, CHIP METAL 4.7k 1% 1/10W  
 1-216-668-11 s RES, CHIP METAL 5.1k 1% 1/10W  
 1-216-669-11 s RES, CHIP METAL 5.6k 1% 1/10W

## (RESISTOR, CHIP METAL)

## Part No. SP Description

1-216-670-11 s RES, CHIP METAL 6.2k 1% 1/10W  
 1-216-671-11 s RES, CHIP METAL 6.8k 1% 1/10W  
 1-216-672-11 s RES, CHIP METAL 7.5k 1% 1/10W  
 1-216-673-11 s RES, CHIP METAL 8.2k 1% 1/10W  
 1-216-674-11 s RES, CHIP METAL 9.1k 1% 1/10W

1-216-675-11 s RES, CHIP METAL 10k 1% 1/10W  
 1-216-676-11 s RES, CHIP METAL 11k 1% 1/10W  
 1-216-677-11 s RES, CHIP METAL 12k 1% 1/10W  
 1-216-678-11 s RES, CHIP METAL 13k 1% 1/10W  
 1-216-679-11 s RES, CHIP METAL 15k 1% 1/10W

1-216-680-11 s RES, CHIP METAL 16k 1% 1/10W  
 1-216-681-11 s RES, CHIP METAL 18k 1% 1/10W  
 1-216-682-11 s RES, CHIP METAL 20k 1% 1/10W  
 1-216-683-11 s RES, CHIP METAL 22k 1% 1/10W  
 1-216-684-11 s RES, CHIP METAL 24k 1% 1/10W

1-216-685-11 s RES, CHIP METAL 27k 1% 1/10W  
 1-216-686-11 s RES, CHIP METAL 30k 1% 1/10W  
 1-216-687-11 s RES, CHIP METAL 33k 1% 1/10W  
 1-216-688-11 s RES, CHIP METAL 36k 1% 1/10W  
 1-216-689-11 s RES, CHIP METAL 39k 1% 1/10W

1-216-690-11 s RES, CHIP METAL 43k 1% 1/10W  
 1-216-691-11 s RES, CHIP METAL 49k 1% 1/10W  
 1-216-692-11 s RES, CHIP METAL 51k 1% 1/10W  
 1-216-693-11 s RES, CHIP METAL 56k 1% 1/10W  
 1-216-694-11 s RES, CHIP METAL 62k 1% 1/10W

1-216-695-11 s RES, CHIP METAL 68k 1% 1/10W  
 1-216-696-11 s RES, CHIP METAL 75k 1% 1/10W  
 1-216-697-11 s RES, CHIP METAL 82k 1% 1/10W  
 1-216-698-11 s RES, CHIP METAL 91k 1% 1/10W  
 1-216-699-11 s RES, CHIP METAL 100k 1% 1/10W

## EX-224, IF-278

## EX-224 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-6266-178-A	o MOUNTED CIRCUIT BOARD, EX-224
CN1M	1-566-986-11	o CONNECTOR, 100P, MALE
CN2M	1-566-986-11	o CONNECTOR, 100P, MALE
CN3F	1-566-984-11	o CONNECTOR, 100P, FEMALE
CN4F	1-566-984-11	o CONNECTOR, 100P, FEMALE

## IF-278 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-6267-182-A	o MOUNTED CIRCUIT BOARD, IF-278
C1	1-161-494-00	s CERAMIC 0.022uF 25V
C2	1-161-494-00	s CERAMIC 0.022uF 25V
C3	1-161-494-00	s CERAMIC 0.022uF 25V
C4	1-162-209-31	s CERAMIC 27PF 5% 50V
C5	1-162-209-31	s CERAMIC 27PF 5% 50V
C6	1-126-160-11	s ELECT 1uF 20% 50V
C7	1-161-494-00	s CERAMIC 0.022uF 25V
C8	1-161-494-00	s CERAMIC 0.022uF 25V
C9	1-162-199-31	s CERAMIC 10PF 5% 50V
C10	1-162-199-31	s CERAMIC 10PF 5% 50V
C11	1-124-584-00	s ELECT 100uF 20% 10V
C12	1-161-494-00	s CERAMIC 0.022uF 25V
C13	1-162-286-31	s CERAMIC 220PF 10% 50V
C14	1-161-494-00	s CERAMIC 0.022uF 25V
C15	1-124-463-00	s ELECT 0.1uF 20% 50V
C16	1-126-096-11	s ELECT 10uF 20% 35V
C17	1-161-494-00	s CERAMIC 0.022uF 25V
C18	1-161-494-00	s CERAMIC 0.022uF 25V
C19	1-162-286-31	s CERAMIC 220PF 10% 50V
C20	1-161-494-00	s CERAMIC 0.022uF 25V
C21	1-161-494-00	s CERAMIC 0.022uF 25V
C22	1-124-584-00	s ELECT 100uF 20% 10V
CN1	1-506-731-11	o CONNECTOR 40P
D1	8-719-911-19	s DIODE 1SS119
D2	8-719-911-19	s DIODE 1SS119
D3	8-719-911-19	s DIODE 1SS119
D4	8-719-911-19	s DIODE 1SS119
D5	8-719-911-19	s DIODE 1SS119
D6	8-719-911-19	s DIODE 1SS119
D7	8-719-911-19	s DIODE 1SS119
D8	8-719-911-19	s DIODE 1SS119
D9	8-719-911-19	s DIODE 1SS119
D10	8-719-911-19	s DIODE 1SS119
D11	8-719-911-19	s DIODE 1SS119
D12	8-719-911-19	s DIODE 1SS119
D13	8-719-911-19	s DIODE 1SS119
D14	8-719-911-19	s DIODE 1SS119
D15	8-719-911-19	s DIODE 1SS119
D16	8-719-911-19	s DIODE 1SS119
D17	8-719-911-19	s DIODE 1SS119
D18	8-719-911-19	s DIODE 1SS119
D19	8-719-911-19	s DIODE 1SS119
D20	8-719-911-19	s DIODE 1SS119
D21	8-719-911-19	s DIODE 1SS119
D22	8-719-911-19	s DIODE 1SS119
D23	8-719-911-19	s DIODE 1SS119
D24	8-719-911-19	s DIODE 1SS119
D25	8-719-911-19	s DIODE 1SS119
D26	8-719-911-19	s DIODE 1SS119
D27	8-719-911-19	s DIODE 1SS119
D28	8-719-911-19	s DIODE 1SS119
D29	8-719-911-19	s DIODE 1SS119
IC1	8-759-202-89	s IC TC74HC139P
IC2	8-759-744-98	s IC MSM27C256A-BVS1201
IC3	8-759-303-94	s IC HD64B180ROP
IC4	8-752-328-10	s IC CAX58648P-10L

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Part List".

## (IF-278 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
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IC5	8-759-908-35	s IC TL7705CP-B
IC6	8-759-916-25	s IC SN74HC32N
IC7	8-759-926-30	s IC AM26LS30PC
IC8	8-759-007-10	s IC MC74HC541N
IC9	8-759-936-68	s IC CXD1095Q

IC10	8-759-202-11	s IC TC74HC00P
IC11	8-759-916-29	s IC SN74HC74N
IC12	8-759-926-32	s IC AM26LS32PC

JW1	1-564-948-21	o CONNECTOR, 3P
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Q1	8-729-900-85	s TRANSISTOR DTC144WS
Q2	8-729-900-85	s TRANSISTOR DTC144WS
Q3	8-729-900-85	s TRANSISTOR DTC144WS
Q4	8-729-900-85	s TRANSISTOR DTC144WS
Q5	8-729-900-85	s TRANSISTOR DTC144WS

Q6	8-729-900-85	s TRANSISTOR DTC144WS
Q7	8-729-900-85	s TRANSISTOR DTC144WS
Q8	8-729-900-85	s TRANSISTOR DTC144WS
Q9	8-729-900-85	s TRANSISTOR DTC144WS
Q10	8-729-900-85	s TRANSISTOR DTC144WS

R1	1-249-425-11	s CARBON 4.7K 5% 1/4W
R2	1-249-425-11	s CARBON 4.7K 5% 1/4W
R3	1-249-425-11	s CARBON 4.7K 5% 1/4W
R4	1-249-425-11	s CARBON 4.7K 5% 1/4W
R5	1-249-393-11	s CARBON 10 5% 1/4W

R6	1-249-425-11	s CARBON 4.7K 5% 1/4W
R7	1-249-425-11	s CARBON 4.7K 5% 1/4W
R8	1-249-405-11	s CARBON 100K 5% 1/4W
R9	1-249-425-11	s CARBON 4.7K 5% 1/4W
R10	1-249-425-11	s CARBON 4.7K 5% 1/4W

R11	1-249-425-11	s CARBON 4.7K 5% 1/4W
R12	1-249-405-11	s CARBON 100K 5% 1/4W
R13	1-249-441-11	s CARBON 100K 5% 1/4W
R14	1-249-441-11	s CARBON 100K 5% 1/4W
R15	1-249-425-11	s CARBON 4.7K 5% 1/4W

R16	1-249-425-11	s CARBON 4.7K 5% 1/4W
R17	1-249-429-11	s CARBON 10K 5% 1/4W
R18	1-249-425-11	s CARBON 4.7K 5% 1/4W
R19	1-249-425-11	s CARBON 4.7K 5% 1/4W
R20	1-249-425-11	s CARBON 4.7K 5% 1/4W

R21	1-249-429-11	s CARBON 10K 5% 1/4W
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RB1	1-231-410-00	s RESISTOR BLOCK 10Kx8
RB2	1-235-005-00	s RESISTOR BLOCK 47Kx8
RB3	1-235-005-00	s RESISTOR BLOCK 47Kx8
RB4	1-235-005-00	s RESISTOR BLOCK 47Kx8
RB5	1-235-005-00	s RESISTOR BLOCK 47Kx8

S1	1-570-623-11	s SWITCH, DIP 8-CKT
S2	1-570-623-11	s SWITCH, DIP 8-CKT
S3	1-570-204-21	s SWITCH, KEY BOARD

X1	1-567-812-11	s RESONATOR, CERAMIC 12.288MHz
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Z1	1-562-579-21	s PLUG, SHORTING
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## LE-76 BOARD

Ref. No. or Q'ty	Part No.	SP Description
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1pc	1-631-489-11	o PRINTED CIRCUIT BOARD, LE-76
4pcs	3-674-390-00	o HOLDER (B), LED

CN1	1-506-468-11	s CONNECTOR, 3P, MALE
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D1	8-719-812-32	s LED TLY123, YEL
D2	8-719-812-32	s LED TLY123, YEL
D3	8-719-812-32	s LED TLY123, YEL
D4	8-719-812-32	s LED TLY123, YEL

R1	1-249-408-11	s CARBON 180 5% 1/4W
R2	1-249-408-11	s CARBON 180 5% 1/4W
R3	1-249-408-11	s CARBON 180 5% 1/4W
R4	1-249-408-11	s CARBON 180 5% 1/4W

## MB-263 BOARD

Ref. No. or Q'ty	Part No.	SP Description
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1pc	2-130-288-11	o SUPPORT
4pcs	4-612-636-01	s SCREW, CONNECTOR FITTING

CN1F	1-566-985-11	o CONNECTOR, 100P, FEMALE
CN2F	1-566-985-11	o CONNECTOR, 100P, FEMALE
CN3M	1-568-674-11	o CONNECTOR, D-SUB 15P, MALE
CN4F	1-568-677-11	o CONNECTOR, D-SUB 25P, FEMALE
CN5M	1-564-921-11	o CONNECTOR, 7P, MALE

CN6M	1-506-468-11	s CONNECTOR, 3P, MALE
CN7F	1-568-676-11	o CONNECTOR, D-SUB 9P, FEMALE
CN8F	1-568-676-11	o CONNECTOR, D-SUB 9P, FEMALE

## RY-9 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-6267-181-A	o MOUNTED CIRCUIT BOARD, RY-9
C1	1-126-157-11	s ELECT 10uF 20% 16V
CN1	1-564-857-11	o CONNECTOR, PS-SF 20P
IC1	8-759-921-84	s IC SN74HC4514NT
IC2	8-759-234-61	s IC TD62306P
IC3	8-759-234-61	s IC TD62306P
R1	1-215-373-31	s METAL 10 1% 1/6W
RY1	1-515-640-11	s RELAY
RY2	1-515-640-11	s RELAY
RY3	1-515-640-11	s RELAY
RY4	1-515-640-11	s RELAY
RY5	1-515-640-11	s RELAY
RY6	1-515-640-11	s RELAY
RY7	1-515-640-11	s RELAY
RY8	1-515-640-11	s RELAY
RY9	1-515-640-11	s RELAY
RY10	1-515-640-11	s RELAY
RY11	1-515-640-11	s RELAY
RY12	1-515-640-11	s RELAY

## SW-354 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-6267-176-A	o MOUNTED CIRCUIT BOARD, SW-354
1pc	2-130-288-01	o SUPPORT
1pc	4-612-636-01	s SCREW, CONNECTOR FITTING
C1	1-124-589-11	s ELECT 47uF 20% 16V
C2	1-124-589-11	s ELECT 47uF 20% 16V
CN1	1-568-675-11	o CONNECTOR, D-SUB 25P
D1	8-719-911-19	s DIODE 1SS119
D2	8-719-911-19	s DIODE 1SS119
D3	8-719-911-19	s DIODE 1SS119
D4	8-719-911-19	s DIODE 1SS119
D5	8-719-911-19	s DIODE 1SS119
D6	8-719-911-19	s DIODE 1SS119
D7	8-719-911-19	s DIODE 1SS119
D8	8-719-911-19	s DIODE 1SS119
D9	8-719-911-19	s DIODE 1SS119
D10	8-719-911-19	s DIODE 1SS119
D11	8-719-911-19	s DIODE 1SS119
D12	8-719-911-19	s DIODE 1SS119
D13	8-719-911-19	s DIODE 1SS119
D14	8-719-911-19	s DIODE 1SS119
D15	8-719-911-19	s DIODE 1SS119
D16	8-719-911-19	s DIODE 1SS119
D17	8-719-911-19	s DIODE 1SS119
D18	8-719-911-19	s DIODE 1SS119
IC1	8-759-921-85	s IC SN74HC4515NT
IC2	8-759-921-85	s IC SN74HC4515NT
Q1	8-729-119-78	s TRANSISTOR 2SC2603-E
R1	1-215-405-00	s METAL 220 1% 1/6W
R2	1-215-409-00	s METAL 330 1% 1/6W
R3	1-215-373-31	s METAL 10 1% 1/6W
R4	1-215-373-31	s METAL 10 1% 1/6W
R5	1-215-453-00	s METAL 22K 1% 1/6W
R6	1-215-453-00	s METAL 22K 1% 1/6W
R7	1-215-469-00	s METAL 100K 1% 1/6W
R8	1-215-469-00	s METAL 100K 1% 1/6W
R9	1-215-469-00	s METAL 100K 1% 1/6W
R10	1-215-469-00	s METAL 100K 1% 1/6W
R11	1-215-469-00	s METAL 100K 1% 1/6W
R12	1-215-469-00	s METAL 100K 1% 1/6W
R13	1-215-469-00	s METAL 100K 1% 1/6W
R14	1-215-469-00	s METAL 100K 1% 1/6W
S1	1-571-966-12	s SWITCH, PUSH
S2	1-571-966-12	s SWITCH, PUSH
S3	1-571-966-12	s SWITCH, PUSH
S4	1-571-966-11	s SWITCH, PUSH
S5	1-571-966-11	s SWITCH, PUSH
S6	1-571-966-11	s SWITCH, PUSH
S7	1-571-966-11	s SWITCH, PUSH
S8	1-571-966-11	s SWITCH, PUSH
S9	1-571-966-11	s SWITCH, PUSH
S10	1-571-966-11	s SWITCH, PUSH
S11	1-571-966-11	s SWITCH, PUSH
S12	1-571-966-11	s SWITCH, PUSH
S13	1-572-001-11	s SWITCH, PUSH
S14	1-572-001-21	s SWITCH, PUSH

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Part List".

## VSW-22 BOARD

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-6257-241-A	o MOUNTDE CIRCUIT BOARD, VSW-22
1pc	1-139-014-51	o LABEL, PC BOARD NAME
1pc	2-182-909-01	o LEVER, PC BOARD
C5	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C10	1-126-392-11	s ELECT, CHIP 100uF 20% 6.3V
C11	1-164-161-11	s CERAMIC, CHIP 0.0022uF 10% 100V
C14	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C15	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C21	1-126-635-11	s ELECT 1000uF 5.5VPF
C23	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C28	1-126-392-11	s ELECT, CHIP 100uF 20% 6.3V
C29	1-126-392-11	s ELECT, CHIP 100uF 20% 6.3V
C30	1-126-392-11	s ELECT, CHIP 100uF 20% 6.3V
C34	1-126-392-11	s ELECT, CHIP 100uF 20% 6.3V
C101	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C102	1-124-287-00	s ELECT 10uF 20% 10V
C103	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C104	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C105	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C201	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C202	1-124-287-00	s ELECT 10uF 20% 10V
C203	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C301	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C302	1-124-287-00	s ELECT 10uF 20% 10V
C303	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C304	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C305	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C401	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C402	1-124-287-00	s ELECT 10uF 20% 10V
C403	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C501	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C502	1-124-287-00	s ELECT 10uF 20% 10V
C503	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C504	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C505	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C601	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C602	1-124-287-00	s ELECT 10uF 20% 10V
C603	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C701	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C702	1-124-287-00	s ELECT 10uF 20% 10V
C703	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C704	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C705	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C801	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C802	1-124-287-00	s ELECT 10uF 20% 10V
C803	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C901	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C902	1-124-287-00	s ELECT 10uF 20% 10V
C903	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C904	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C905	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C1001	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C1002	1-124-287-00	s ELECT 10uF 20% 10V
C1003	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C1101	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C1102	1-124-287-00	s ELECT 10uF 20% 10V
C1103	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C1104	1-135-156-21	s TANTAL 6.8uF 10% 6.3V

## (VSW-22 BOARD)

Ref. No. or Q'ty	Part No.	SP Description
C1105	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C1201	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
C1202	1-124-287-00	s ELECT 10uF 20% 10V
C1203	1-135-156-21	s TANTAL 6.8uF 10% 6.3V
CN4	1-563-239-11	s CONNECTOR, 40P
CN5	1-563-322-11	s CONNECTOR, 20P
CN3F	1-563-063-12	s CONNECTOR, D-SUB(MOUNT TYPE)25P
CN1M	1-566-986-11	o CONNECTOR, 100P, MALE
CN2M	1-566-986-11	o CONNECTOR, 100P, MALE
CV1	1-141-304-21	s CAP, TRIMMER 10PF
D1	8-719-100-05	s DIODE 1S2837
D2	8-719-100-05	s DIODE 1S2837
D3	8-719-100-05	s DIODE 1S2837
D4	8-719-100-05	s DIODE 1S2837
D5	8-719-100-05	s DIODE 1S2837
D6	8-719-100-05	s DIODE 1S2837
D7	8-719-100-05	s DIODE 1S2837
D8	8-719-100-05	s DIODE 1S2837
D9	8-719-100-05	s DIODE 1S2837
D10	8-719-100-05	s DIODE 1S2837
D11	8-719-100-05	s DIODE 1S2837
D12	8-719-100-05	s DIODE 1S2837
D13	8-719-100-05	s DIODE 1S2837
D14	8-719-100-05	s DIODE 1S2837
D15	8-719-100-05	s DIODE 1S2837
D16	8-719-100-05	s DIODE 1S2837
D17	8-719-100-05	s DIODE 1S2837
D18	8-719-100-05	s DIODE 1S2837
D19	8-719-100-03	s DIODE 1S2835
D26	8-719-800-76	s DIODE 1S2226
D27	8-719-100-05	s DIODE 1S2837
D28	8-719-100-05	s DIODE 1S2837
D29	8-719-100-05	s DIODE 1S2837
FL1	1-421-773-11	s FILTER, NOISE REMOVAL
FL2	1-421-773-11	s FILTER, NOISE REMOVAL
IC1	8-759-206-28	s IC TC74HC123F
IC2	8-759-206-28	s IC TC74HC123F
IC3	8-759-987-27	s IC LM1831M
IC4	8-759-206-28	s IC TC74HC123F
IC5	8-759-925-80	s IC SN74HC14NS
IC6	8-759-234-24	s IC TC40175BF
IC7	8-759-420-41	s IC MM4514BS
IC11	1-808-776-11	s HIC (V OUT)
IC12	8-759-200-79	s IC TC4049BF
IC13	8-759-200-74	s IC TC4023BF
IC101	8-752-038-19	s IC CXAI432P
IC102	8-752-038-18	s IC CXAI431P
IC201	8-752-038-19	s IC CXAI432P
IC301	8-752-038-19	s IC CXAI432P
IC302	8-752-038-18	s IC CXAI431P
IC401	8-752-038-19	s IC CXAI432P
IC501	8-752-038-19	s IC CXAI432P
IC502	8-752-038-18	s IC CXAI431P
IC601	8-752-038-19	s IC CXAI432P
IC701	8-752-038-19	s IC CXAI432P
IC702	8-752-038-18	s IC CXAI431P
IC801	8-752-038-19	s IC CXAI432P

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Part List".

# VSW-22, FRAME

## (VSW-22 BOARD)

Ref. No.  
or Q'ty Part No. SP Description

IC901 8-752-038-19 s IC CXA1432P  
IC902 8-752-038-18 s IC CXA1431P  
IC1001 8-752-038-19 s IC CXA1432P  
IC1101 8-752-038-19 s IC CXA1432P  
IC1102 8-752-038-18 s IC CXA1431P

IC1201 8-752-038-19 s IC CXA1432P

JW1 1-564-950-21 o PIN, CONNECTOR, 8P  
JW2 1-564-948-21 o PIN, CONNECTOR, 3P  
JW3 1-564-948-21 o PIN, CONNECTOR, 3P  
JW4 1-564-948-21 o PIN, CONNECTOR, 3P  
JW5 1-564-948-21 o PIN, CONNECTOR, 3P

L1 1-421-329-00 s COIL, CHOKE

Q1 8-729-107-31 s TRANSISTOR 2SC3545-T1T44  
Q2 8-729-216-22 s TRANSISTOR 2SA1162  
Q3 8-729-100-66 s TRANSISTOR 2SC1623  
Q5 8-729-113-23 s TRANSISTOR FA1L4L-T1L30  
Q8 8-729-107-31 s TRANSISTOR 2SC3545-T1T44

Q9 8-729-113-23 s TRANSISTOR FA1L4L-T1L30  
Q10 8-729-113-23 s TRANSISTOR FA1L4L-T1L30  
Q11 8-729-113-23 s TRANSISTOR FA1L4L-T1L30  
Q12 8-729-113-23 s TRANSISTOR FA1L4L-T1L30

R5 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R6 1-216-109-00 s METAL, CHIP 330K 5% 1/10W  
R7 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R11 1-216-117-00 s METAL, CHIP 680K 5% 1/10W  
R19 1-216-103-00 s METAL, CHIP 180K 5% 1/10W

R63 1-216-101-00 s METAL, CHIP 150K 5% 1/10W  
R84 1-216-615-11 s METAL, CHIP 33 0.5% 1/10W  
R101 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R201 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R301 1-216-105-00 s METAL, CHIP 220K 5% 1/10W

R401 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R501 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R601 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R701 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R801 1-216-105-00 s METAL, CHIP 220K 5% 1/10W

R901 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R1001 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R1101 1-216-105-00 s METAL, CHIP 220K 5% 1/10W  
R1201 1-216-105-00 s METAL, CHIP 220K 5% 1/10W

RVI 1-228-454-00 s ADJ, CERMET 200

Z1 1-562-579-21 s PLUG, SHORTING  
Z2 1-562-579-21 s PLUG, SHORTING  
Z3 1-562-579-21 s PLUG, SHORTING  
Z4 1-562-579-21 s PLUG, SHORTING  
Z5 1-562-579-21 s PLUG, SHORTING

## FRAME

Ref. No.  
or Q'ty Part No. SP Description

1pc A 1-413-462-11 s REGULATOR, SWITCHING (ED-111)  
1pc 1-944-067-11 s HARNESS (9P) 9P/9P/9P

## (to LE-76 BOARD)

CN1 1-562-148-11 o HOUSING, 3P  
1-564-026-00 o CONTACT, FEMALE, AWG26-30

## (to MB-263 BOARD)

CN5 1-562-185-00 o HOUSING, 14P  
1-563-814-11 s CONTACT, FEMALE  
CN6 1-562-157-11 o HOUSING, 12P  
1-563-814-11 s CONTACT, FEMALE  
CN10 1-562-185-00 o HOUSING, 14P  
1-563-088-11 s CONTACT, FEMALE, AWG24-30  
CN11 1-562-822-11 o HOUSING, 7P  
1-560-764-21 o CONTACT, FEMALE, AWG18-24  
CN12 1-562-148-11 o HOUSING, 3P  
1-564-026-00 o CONTACT, FEMALE, AWG26-30

## (to SWITCHING REGULATOR)

CN1 A 1-562-818-11 o HOUSING, 3P  
A 1-560-764-21 o CONTACT, FEMALE AWG18-24  
CN3 1-562-822-11 o HOUSING, 7P  
1-560-764-21 o CONTACT, FEMALE AWG18-24

CN101 A 1-560-222-11 s 3P INLET

CN201 1-563-817-21 s CONNECTOR, D-SUB 25P  
1-563-088-11 o CONTACT, FEMALE

CN204 1-566-355-21 s CONNECTOR, D-SUB 15P  
1-566-353-21 o CONTACT, FEMALE

S101 A 1-570-384-11 s SWITCH, ROCKER (AC POWER)

Parts that are not listed in the "reference number order list" are shown in the "General Purpose Electrical Part List".

## PACKING MATERIALS &amp; SUPPLIED ACCESSORIES

Ref. No. or Q'ty	Part No.	SP Description
1pc	A-6266-178-A	o MOUNTED CIRCUIT BOARD, EX-224
(See "EX-224 BOARD" for the components.)		
1pc	▲ 1-534-754-00	s CORD, POWER
1pc	▲ 1-551-812-00	s CORD, POWER 3P
1pc	▲ 1-556-760-11	s CORD, POWER 3P
1pc	1-943-888-12	o HARNESS (UNIT) 25P/25P
1pc	1-944-065-21	o HARNESS (A102) 20P/20P
1pc	2-990-242-01	o HOLDER (B), PLUG
2pcs	3-668-459-00	s SCREW, CONNECTOR